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## IMPROVEMENT OF WORN-OUT LANDS— MODES OF FORMING COMPOSTS— AGENTS FOR DECOMPOSING INERT VEGETABLE MATTERS, &c.

MINTONSVILLE, N. C., July 22, 1852.

I am now through my crop, and it bids fair for a good yield, if the seasons should be favorable, but now it is quite dry. I am now preparing for heavy manuring for another year; I am getting out a large quantity of swamp mud, (some 5 or 10,000 loads,) and I wish you to inform me which will be best, to compost it or haul it into the field and spread it, and then apply lime or ashes—which will be best, and what quantity per acre? The land is stiff and poor, bringing, without manure, 2 bbls. per acre. If I compost, it will double the expense, because I shall have to haul twice, but if it will pay, I am willing to undertake it. In making my compost heaps, I have been in the habit of putting my lime in unslaked—is it best? I apply it to my land in the same way—give me the best plan. I have 2000 bushels ashes, and intend purchasing 2000 bushels shells for my land, and will apply it by your direction. The lime I intend for another place; the growth is red and white oak, pine, gum, holly, &c., mostly new land, and will bring 5 to 7 bbls. per acre; subsoil stiff clay. Any information you can give will be thankfully received.

Yours,

A. SMITH JORDAN.

*Replies by the editor of the American Farmer.*

### METHODS OF FORMING COMPOSTS.

There is so much of the true spirit of generous enterprise in the foregoing letter, that it gives us pleasure to respond to the inquiries of its writer, as he who will undergo the labor and expense of raising and composting from five to ten thousand loads of marsh mud, with the view of converting it into manure, in order that he may restore his land to fertility, deserves to receive all the lights which experience or science can throw across his pathway. If he "who makes two blades of grass grow where but one had grown before," is entitled to be considered a public benefactor, surely our correspondent is worthy of equal distinction. His example cannot fail to exert a happy influence throughout the breadth and length of his neighborhood, if success should attend his attempt in improving his land—and that success will attend his

efforts, if his "swamp mud" is properly composted, we do not entertain the scintillation of a doubt.

He says:—

"I am now preparing for heavy manuring another year. I am getting out a large quantity of swamp mud, some 5 or 10,000 loads, and I wish you to inform me which will be best, to compost it, or haul it into the field and spread it, and then apply lime or ashes? which will be best and what quantity per acre?"

To this question we answer: *It will be best to compost his swamp-mud before applying it to his field.* The reasons for which advice he will find in the subsequent part of this paper. All such substances as swamp mud, peat, river mud, woods-mould and leaves, woods-mould and pine shatters, indeed, all such rough animal, and vegetable bodies, should be excited into the incipient state of decay before being used as manure. It is not necessary that it should be thoroughly decomposed, but it is absolutely necessary, that the process of decay be commenced before it is applied. That state having been begun, it will be carried on healthfully after the compost may have been ploughed into the ground, as in that condition it will attract and absorb the oxygen of the air, through whose agency decomposition will be continued till the good work shall have been completed.

Our Correspondent informs us, that he has 2000 bushels of ashes; with that quantity, if they be of the hardwoods, are unslaked, and have been preserved from the weather, he may excite 1000 loads of his marsh mud into the incipient state of decay. We say a thousand loads, because, independent of the potash which they contain—which will amount to some 11,000 lbs., there will be three other efficient agents at work to aid in carrying on the processes of fermentation, putrefaction, and, ultimately, decomposition. In forming the compost heaps, we would apportion to every twenty loads of marsh mud 1 bushel of plaster, and if the mud was not salt marsh mud, we would add 2 bushels of salt, in solution. This would expedite fermentation, and aid the plaster, in preventing loss from the escape of the ammoniacal gases, render the mass much sooner fit for use, and make it intrinsically more valuable; for ammonia may be considered as the true measure of the value in all organic manures; and such being the case, every pains should be taken to prevent it being lost by evaporation.—

*Theory* would require a larger quantity of ashes to be used as the solvent of the body of mud named; but we apprehend that the estimate was based upon the quantity of potash known to exist in a given quantity of ashes; there are, however, as we have before premised, other substances in ashes, which are active solvents, as Lime and Soda; the first existing in much larger quantity than does the potash, while there are 1000 lbs. of soda in the 2000 bushels of ashes, if unslaked, of our correspondent, if made from Red Beech wood, and 2000 lbs. if made from oak—the potash may be estimated at about 11,000 lbs., and the lime at upwards of 12,000 lbs. or to reduce the lime into bushels, if made from the first named wood, it may be computed at 25 per cent., while, if from the latter, at upwards of 17 per cent. Again, *Magnesia*, which notably abounds in all ashes, possesses the property of a solvent, in common with lime, potash, and soda, though in a less degree; but sufficiently so to exert a powerful influence in promoting decomposition in vegetable substances.

Having hitherto spoken of ashes made from the *hard-woods*, we shall now give the constituent elements of ashes made from *pine-wood*, as there are many parts of our country where such ashes will have to be chiefly relied upon. We copy the following tables from Dana.

**PINE**—100 parts of dry wood afford only .83 lb. of ashes; of which 100 parts afford of soluble, 50; of insoluble, 50.

100 parts of the soluble contain:

Carbonic Acid,	13.50
Sulphuric Acid,	6.90
Silex,	2.
Potash and Soda,	69.70
Water,	7.90

100 parts of the insoluble contain:

Carbonic Acid,	21.50
Phosphoric Acid,	1.80
Silex,	13.
Magnesia,	8.70
Oxide of iron,	22.30
Oxide of Manganese,	5.50
Lime,	27.90

Berthier gives the following Analysis of Pitch Pine:

Silica,	7.50
Oxide of iron,	11.10
Oxide of Manganese,	2.75
Lime,	13.60
Magnesia,	4.35
Potash,	14.10
Soda,	20.75
Sulphuric Acid,	3.45
Phosphoric Acid,	0.90
Carbonic Acid,	17.50

That our readers may be enabled to form an estimate of the relative value of ashes, when made from different kinds of wood, both as *solvents*, and as *improvers* of the soil, we annex the following table; the analyses of the three first were by *Sprengel*, the last by *Berthier*:

	Red Beech.	Oak.	Scotch Fir.	Pitch Pine.
Silica,	5.52	26.93	6.29	7.50
Alumina,	2.33			
Oxide of iron,	3.77	8.14	17.03	11.10
Oxide of Manganese,	3.55			2.75
Lime,	25.00	17.38	23.18	13.60
Magnesia,	5.00	1.44	5.02	4.35
Potash,	22.11	16.30	2.90	14.10

Soda,	3.39	6.73	2.23	20.75
Sulphuric Acid,	7.64	3.36	2.23	3.45
Phosphoric Acid,	5.83	1.92	2.75	0.90
Chlorine,	1.84	2.41	2.30	
Carbonic Acid,	14.00	15.47	36.48	17.50
	100.	100.	100.	100.

It will be seen by the above tables, that the pine family of wood, are not so rich in lime or potash, as the two hard wood ones, the analyses of whose ashes are given; yet that they are richer in potash and soda combined, and that the *mean* per centage of magnesia in the ashes of Beech and Oak, is less than that found in those of Pitch Pine. Now then, as both Potash and Soda are very active solvents, the ashes made from pitch pine are highly valuable agents in any compost heap, not only on account of these substances, but, because they are also comparatively rich in Lime and Magnesia, both of which are good solvents. As a whole, Pine Wood Ashes will be found an excellent ingredient in every compost heap, where the object aimed at, is the decomposition of the rough inert material, which may form the base of the compost heap. But we would here observe, that, be the solvent used what it may, each compost heap should be liberally treated to plaster as a means of preventing the loss of the volatile portions of the materials; for in all bodies usually embodied in the compost heap, there are more or less nitrogenous matter, which is one of the great leavening principles of vegetable productions. If the peat, marsh mud, or river mud, be not from formations subject to the overflow of salt water, we would combine two bushels of salt, with whatever quantity of plaster we might put upon the quantity of compost intended for an acre.

We shall now direct the attention of our correspondent, and all other readers, to the following essay, which we wrote, *con amore*, in January 1851, and had inserted in the *American Artisan*, published in New York, with the view that it might meet the eyes of the gentleman for whose benefit it was particularly written. The directions therein given, as to the methods of composting *peat*, are just as applicable to *swamp mud*, *river*, or *creek mud*, *woods-mould and leaves*, *woods-mould and pine shatters*, and all kindred substances, as they are to the former substance; while the quantities of the decomposers will be found to act with more efficiency—with more promptness—on the latter matters.

"For the *American Artisan*."

#### CONVERSION OF PEAT INTO MANURE.

As along the whole range of the coasts of the *Atlantic States*, as well as upon the margins of those rivers, bays, creeks and estuaries, which abound therein, and find ultimate outlets in the ocean, there are to be found vast deposits of *Peat*, and kindred vegetable bodies, the utilization of these substances as manures, becomes an object of the very last importance, and the more so, as, from a long continued course of improvident culture, most of the arable lands in those states have become greatly exhausted, and the ordinary sources of manure have failed, thus far, to arrest the course of deterioration to which they have been subjected."

"Peat, as we know, is composed of vegetable matter, the accumulation of centuries, in certain locations, there deposited under circumstances

which but slightly favor decomposition, and may be said to consist of decomposed, partially decomposed, and undecomposed vegetable matters, which may be very readily presumed to be somewhat variant in their constituent elements, and which, according as they may have been more or less excluded from the influence of atmospheric air, by superincumbent water, to have undergone a greater or less degree of decay. But as Peat was once possessed of life, its power of reproducing life in living bodies, can, by the application of proper agents, be restored, and restored so effectually too, as to make every pound of it equally good for the fertilization of the soil, as would be an equal weight of barn-yard or stable manure. The means by which this desirable end can be brought about is the object of the writer of this essay, whose purpose shall be to state them in so plain and practical a way, as to place the *modus operandi* within the comprehension of all."

"Peat operated upon by local circumstances, may vary, to some extent, in composition, but the difference is too trifling to effect its value as manure, as will be made manifest by the following facts:

The mean of 20 analyses of peats of Rhode Island, by Dr. Jackson, gave the following results:

Water, from	10 to 25 per cent.
Ashes, when burned,	24.07 "
Vegetable matter,	72.39 "
Silica,	4.31 "
Iron and Alumina,	1.34 "
Lime,	1.32 "
Magnesia,	.32 "

The average of 10 analyses of Massachusetts peat, agreeably to Dana, was as follows:

Soluble Geine,	29.41
Insoluble Geine,	55.03
Salts and Silicates,	15.55 "

"This average comprises various kinds of peat, as the kind usually used as *fuel*, *turf* and *swamp muck*, so that it takes within its range, the ordinary kinds of substances available to farmers, in different situations, and, therefore, presents a fairer view of the real value of such substances than it would be, had the analyses been confined to *fuel-peat* proper, as the two latter bodies are more frequently to be met with in most localities than the former."

"A more recent analysis made of Peat found on the estate of the Hon. James A. Hamilton, of New-Vis, near Dobb's Ferry, in your State, gave the following results.

100 parts of the dried muck contained as follows:

Soluble and insoluble Geine,	81.03 parts.
Silica,	12.46
Alumina,	4.80
Oxide of iron,	1.11
Lime and Magnesia,	.60

100.00

"The average of the preceding 31 analyses, give us above 79 per cent. of vegetable matters in various stages of oxidation, the greatest part of which is in an insoluble condition."

Mr. Hamilton, in speaking of the analysis of his peat, expresses dissatisfaction; thinks it to have been "negligently" made, alleging that the "soluble and insoluble geine" ought to have been ascertained. I agree with the view he has taken, and would go a little farther. The analyst should have carried his tests so far, as to have determined with

certainly, the *absence or presence* in the substance operated upon, of *all* the constituent elements which are known to have been comprised in the *living bodies* in their normal state. In several of the European analyses which have come under my notice, traces of nitrogenous compounds and phosphoric acid, as well as very notable percentages of Sulphuric acid, have been detected, and I can perceive no sufficient reason why similar substances should not be found in the peat of our country."

"As the communication of Mr. Hamilton, which I have just read in Skinner's January number of "The Plough, the Loom, and the Anvil," has suggested the propriety of this essay, I shall quote such parts of it as may be necessary to illustrate the objects I have in view; that is, to enable Mr. Hamilton, and all others, owning estates with peat deposits on them, to convert them into manure. He says:

"I have made experiments and am continuing to do so on a very large scale, at the same time I am very much at a loss as to what is the best and least expensive compound." \* \* My farm of three hundred acres, is situated on the east bank of the Hudson, now about twenty-two miles from New York. It is a light sandy soil, of which Dana says—"none is preferable to be cultivated or restored." Having as part of the Manor of Philipsburg been subjected for many years to the exhausting process of tenant cultivation, by which every thing was taken from the ground, and nothing returned to it, the land, particularly that on the river, was, when I purchased, completely worn out, so much so, as that on some of the fields on my lawn, clover would not grow.

"On the east part of the farm, about three-quarters of a mile from the river, on a very elevated position, there is a Dish, five or six acres in extent, in which there is decomposed vegetable matter: leaves, roots, branches, and even the dead trunks of large trees; which I have probed to the depth of fourteen feet. A small stream fed by springs runs through it, and receives the wash of the adjacent grounds."

"I have run a railroad into this dish about 280 feet, on which I move a dirt cart that will contain about 2 cubic yards, by a pair of oxen; from this it is dumped upon the solid earth. This track is capable, with little trouble, of being shifted as may be required. During all the winter, most of the autumn, and parts of the spring and summer, one, and sometimes two men are employed in getting the muck out, and two pair of horses and an ox team are employed at the same time in hauling it down to the barn-yard and those parts of the farm where it is to be used. Indeed, this is the business of this force at all times when not otherwise engaged on the farm."

"Last season, between August and April, I brought down 1415 loads, part of which was put into the barn-yard, and of course composted with the manure of my stock, and another part was treated as will be hereafter particularly mentioned."

"The first experiment I made was by applying a liberal quantity, a part of that which had been in the barn-yard for about ten weeks, to a field of four acres, after a crop of corn; it was ploughed in and sowed with wheat and timothy. The yield of wheat was twenty bushels to the acre, and the growth of timothy is most satisfactory."

"The second experiment was on a field of five acres and one-third, from which a crop of corn had been taken during the course of the fall and winter. I drew on this field 433 loads, (a load estimated to contain twenty cubic feet,) giving to four acres, which were measured off, 100 loads each, and to the fraction of an acre its portion.—In the spring I drew from the barn-yard 100 loads, which were put on the fifth acre. I applied to the acre

No. 1—50 bushels bone-dust, or one-half bushel to each load.

No. 2—405 lbs. potash, dissolved and sprinkled over each load in equal quantities.

No. 3—100 loads, taken from the barn-yard muck and manure.

No. 4—7 bushels of salt, and 7 bbls. of lime, (caustic) in a thin paste, divided into 100 parts.

No. 5—160 bushels of wood ashes.

After being thoroughly mixed, as the materials were applied, the whole was spread, ploughed in, and planted in hills with Mercer potatoes. The yield was only 447½ bushels of all sizes.

Acres No. 1—Muck and bone-dust, 65 bushels, very small.

Acres No. 2—Potash, 81 bushels, large.

Acres No. 3—Muck and manure, 120 bushels, large.

Acres No. 4—Lime and salt, 55½ bushels, small.

Acres No. 5—Ashes, 83 bushels, small.

1-3 of an acre, Raw Muck, 43 bushels, good size."

"There was very little rot in the field, and most certainly much less in proportion in either acre, than in that where the manure was applied. After the potatoes were taken off, the field was prepared and sowed with wheat, 2 bushels to the acre, and timothy 10 lbs. to the acre, and both have come up satisfactorily."

"The third experiment was with corn. I put 230 loads, taken from the barn-yard muck and manure, on a four acre lot, (a very much impoverished soil,) planted it with corn in hills, which yielded 391 bushels in ears, and from one acre, esteemed to be the best, which was measured off and gathered by itself, 126 bushels."

"\* \* \* If published, I wish such of your readers as have experience, would advise me as to the proper course to pursue."

"I read the communication of Mr. Hamilton, from which the foregoing extracts are taken, with profound interest, not because of the success of his experiments—not because his laudable efforts to convert his peat into manure had proved triumphant; for these experiments have but partially succeeded in the crops of wheat and corn, while those on the potato crop have been entire failures. I feel an interest—a warm and earnest one—in them, because I discover in Mr. H. that *esprit de corps*—that indomitable zeal, which deserves, and must ultimately command success, and because from his perseverance, and the desire he has expressed to be advised "as to the proper course" to pursue, in regard to the manipulation of his peat, I believe he will listen to the voice of reason, whenever that may be proclaimed by a disinterested source. Thus believing, I will venture to say to him, in the most deferential spirit, that his applications to his potatoes were all wrong, though applied in a measure of liberality, which reflects great credit upon him as a public spirited gentle-

man and enterprising farmer. His lands he truly represents as having been worn out by improvident culture; for soil cultivated for a series of years by tenant occupants, is sure to have every element of fertility extracted from it—and this result is not so much the fault of the tenant, as of the landlord, who, by the shortness of the lease, precludes the tenant from expending anything in manures."

"I am among those who look to Geine, or Mould, the substance which so abounds in the peat of Mr. Hamilton's farm, as the soul, if I may so express myself, of every good soil—nay, I believe no soil can be highly productive without its presence in notable proportions. But necessary as it is to all productive lands, if it has to be applied, it must be in a condition, when applied, to yield up its virtues to the growing plants—in other words, it must, before being spread on the earth to be ploughed in, be reduced, by fermentation, to a state of active solubility. This may be brought about either by alkaline bodies, or by those of an animal nature. Not having any analysis of the soil in question, and left to judge of it from the facts furnished by Mr. H., I can arrive at no other practical conclusion, than that when it came into his possession, it had been largely robbed of its *organic* as well as of its *inorganic* original elements—These he will find, to a considerable extent, in his peat, when that comes to be properly prepared—and may be replaced at a much less expense than he incurred in preparing his peat for his potato field."

"I lay it down as a proposition true and self-evident, that any substance like that of peat, which has lain for ages supersaturated in water, excluded from the air, is unfit for direct application to the soil, until it undergoes such process as will infuse new life into it. To effect this, however, requires time; for as the world was not made in a single day, neither can life be inspired into a dead body, unless the proper agencies of resuscitation be used in a proper way, and time be allowed for their action. Now the agents used by Mr. Hamilton were all excellent in themselves, and used with a liberal hand, but owing to their not having been judiciously used, produced little or no effect upon his crop of potatoes, though I apprehend they will tell upon the succeeding crops of wheat and timothy, their present inverted position having brought them more directly under the influence of the atmospheric air."

"Having demurred to the manner adopted by Mr. H. to apply his peat, it is but fair that I should state how, in my opinion, he should apply it."

"Notwithstanding the analysis given by Mr. H. does not show the existence of any nitrogenous substances in his peat or muck, I nevertheless believe they are existent therein. Their condition may be a dormant one, but still susceptible of revivification; therefore, I would avoid the application of lime, unaccompanied by a *fixer*, in the formation of any compost he may make from it. I give the following:

#### "PEAT COMPOST FORMULAS.

1. Spread 100 double horse-cart loads of peat on the ground, 12 inches deep, on that spread 34 loads of stable or barn-yard manure, over that strew 3 bushels of plaster, and so, in the same proportions, continue to build up your heap, alternating peat, manure and plaster. until you have made it 4 or 5 feet high, the width to be reduced, so as



to give to the heap a conical form, taking care to let peat be the top layer, and to build a wall of peat around the heap, to prevent loss of the volatile gases by escape through the sides."

"2. Spread 100 double horse-cart loads of peat on the ground, 12 inches deep, over this spread 1500 lbs. of Graves or Cracklins, broken up fine and evenly distributed; over these strew 150 bushels of ashes, and 3 bushels of plaster, then alternate layers of peat, Graves or Cracklins, ashes and plaster, until your heap is finished—the last layer to be peat; the sides to be walled up as in No. 1.

"3. Spread 100 double horse-cart loads of peat, 12 inches deep, over these spread 200 bushels of ashes, then peat and ashes in alternate layers, until the heap is completed, as directed in numbers 1 and 2."

"4. Spread 100 double horse-cart loads of peat, 12 inches deep, spread thereon 150 bushels of ashes, 50 bushels of bone-dust, and 20 gallons of fish oil, and so proceed until the heap is completed, as before directed in Nos. 1, 2, and 3."

"Spread 100 double horse-cart loads of peat, 12 inches deep, spread thereon 100 bushels of lime, 3 bushels of plaster, and 20 bushels of salt, then alternate layers of peat, &c., until the heap is completed.

"Such compost heaps must remain unused until the agents used shall have decomposed the vegetable matter of the peat, and brought it to a state of solubility. This, in warm weather, is usually brought about in from 6 to 12 weeks. The heaps must be occasionally examined, to ascertain the state of the fermentation. This is done by thrusting a stick into the body of the heap. If on drawing the stick it feels hot, the heap should be shoveled over.

"There are several other substances which may be used as fermenting agents, some of which we will mention—Nitrate of Potash, Soda, Nitrate of Soda—2 per cent. of either of which substances, would be about the right quantity to be incorporated—blood, and the offal of slaughter-houses, are active fermenters—so also are all animal bodies; but while some of these are too dear, others are not to be had in quantities, except under very favorable circumstances of locality. 50 bushels of soot, and 10 bushels of salt would, if properly composted, and permitted to remain a proper time, convert 20 loads of peat into good manure—200 gallons of urine and 1 bushel of plaster, would convert that quantity of peat into a manure, as prompt and efficient, and more lasting than guano. So also would 4000 herrings, or an equal quantity of other fishes, if composted with 20 loads of peat, and 1 bushel of plaster, form an equally valuable, and more permanent manure than guano."

"Peat composts, formed in the way I have indicated, will produce a manure, every twenty or thirty double horse-cart loads of which will be sufficient to fertilize an acre of land to enable it to carry a rotation of crops properly through. But it is unreasonable to think that peat, or any other similar substance, will act without previous preparation—without the living principle is first restored to it."

"From a fact which Mr. H. mentions, viz: that clover would not grow on the soil of his lawn, I think it more than probable that his land will need liming. This can be ascertained by analysis, if he

doubts in the least; but for myself I have none whatever, and should not hesitate to apply from 25 to 50 bushels to each acre that he has improved with the peat compost—applying the lime as a top-dressing, after I had ploughed in the compost."

A word may be necessary in regard to the character of Graves or Cracklins, recommended in formula No. 2. They may be bought at the candle factories, and of packers of meat. Their constituent elements render them peculiarly fitted for the purposes of the compost heap, and especially so where an active agent of decomposition may be required. Besides Carbon, Hydrogen, Oil, Sulphur, and traces of bone-earth, they contain a very large percentage of Nitrogen; so rich are they in this substance, that it may be held to be equal to 13 per cent. of Ammonia."

All composts, before being used, should be shoveled over and intimately mixed.

Peat which may be intended to be utilized through the cattle yard, or hog-sty, should be hauled therein in the fall, so as to have the advantage of the droppings of the animals during autumn, winter, and part of the succeeding spring."

#### MARSH MUD, AND SIMILAR SUBSTANCES, COMPOSTED WITH MARL.

Where it may be convenient to use marl as the agent of decomposition, we would recommend the following plan:

Let the marl be exposed to a winter's frost. In the spring following, spread out 100 double horse-cart loads of the marsh mud, or other rough material, level off the heap, on that place 200 bushels of marl, over that spread 20 bushels of salt and 10 bushels of plaster, then 100 loads of the rough materials, 200 bushels of marl, then 20 bushels of salt, and 10 bushels of plaster, until the pile is 4 feet high; trim up the pile, sow plaster over it, pat down the outside, and let it remain in bulk a few weeks, then shovel it over, and throw it into bulk again, where it must lie some three months before it will be fit for use, as the marl will be slow in acting upon the vegetable matter, in consequence of its being in a carbonate state.

The process of decomposition would be greatly accelerated, if unslaked ashes, in the proportion of 5 bushels to the double horse-cart load of the rough materials, were added at the time of forming the pile:—speedy decomposition might be promoted, and the quality of the compost greatly improved, if the drainage from the cattle-yards and the urine from the stables and dwellings were mixed with plaster, and occasionally poured over the pile; so also would this effect be produced, if 50 loads of animal manure to every 100 loads of the rough materials, were added at the time of forming the compost heap; but if such manure cannot be obtained, 200 lbs. of guano, or 150 lbs. of the Nitrate of Potash, or, the same quantity of Soda, to every 20 loads of the rough materials would answer.

#### HOW LIME IS TO BE USED IN COMPOST.

If our correspondent should desire to use his lime as a decomposer of *moamp-mud*, we would recommend him to slake his lime with a strong salt brine; that, when the lime is slaked, to add a sufficiency of the brine to it, to form it into the consistence of thin paste, and then to form his compost thus:—

Spread 100 double horse-cart loads of his swamp mud on the ground, 12 inches deep, spread thereon 100 bushels of the lime formed into paste, on that spread swamp mud 6 inches in depth, (or, in quantity, 50 double horse-cart loads of the mud,) over that spread 5 bushels of plaster, then spread 50 more loads of the mud, on that spread 100 bushels of lime slaked, and made into thin paste with salt brine, and then continue this process of mud, lime, salt paste, and plaster, until he gets his pile 4 feet high, then sow plaster over the pile and pat it down well; the pile should be formed cone-like, as recommended in formula No. 1, in our essay on the decomposition of Mr. Hamilton's peat.

After the mass shall have remained in bulk two or three weeks, it should be thoroughly shoveled over, so as to intimately mix all the ingredients together, and be formed into bulk again. As the shovelling proceeds, 20 bushels of salt and 20 bushels of plaster should be distributed pretty evenly through the heap.

The above 400 loads of rough materials, thus treated, would be sufficient to manure twenty acres of poor land so as to bring good crops. If after ploughing in his compost, and harrowing his ground he were to top-dress *each acre* with two bushels of bone-dust, and 5 bushels of ashes, which had lain mixed in pile two weeks, and harrow that in, he would find his soil so improved, as to bring luxuriant crops of every description of produce.

His land once thus improved, he must alternate his crops, and not fail to make clover, or clover and the grasses, a part of his system of rotation.

#### SPEEDY MODE OF DECOMPOSING VEGETABLE SUBSTANCES.

We will now add that the following plan of reducing rough materials into good manure is from Dana. He says that the quantity of materials are intended for manuring one acre.

"3 tons of green straw, ferns, bean-stalks, pea vines, potato tops, weeds, leaves, [and we will add, cornstalks—Ed.],

- 90 lbs. of ground Plaster.
- 2 lbs. of common Salt,
- 3 lbs. of Saltpetre;
- 2½ bushels of Ashes,
- 2½ bushels of Charcoal powder,
- 5 bushels of Night Soil.

Make the pile of vegetable matter near a puddle of stagnant water, if possible;—if this is not convenient, sink a pit near the edge of the pile, fill it with common water, then throw into it the night soil, mix it well by stirring, add the ashes, then the charcoal, lastly the Salts.

With a bucket furnished with a long pole handle, like a tanner's scoop, water the pile several times daily with the above mixture, taking care that the drainage runs into the pit to be again returned upon the pile. In two or three weeks in warm weather the heap is sufficiently converted for use.

The yeast, as it may be termed in this process, is the night-soil,\* and the putrescent matter in the stagnant water."

\* Now, we do not ascribe all the decomposing powers of the above ingredients to the night soil—that it is the material one we admit; but we believe that the lime in the plaster, after that is decomposed, and the lime liberated, the Soda of the salt, the nitric acid and potash of the saltpetre, the lime, potash, soda, and the magnesia in the ashes, all act as valuable adjuncts in the process of decomposition.—Ed.

#### BENEFITS OF DRAINAGE.

In concluding, we must be permitted to state, that if any of our correspondent's lands be wet, before attempting their improvement, he should drain them, to relieve the soil of its superabundance of water—that he must *plough deep*, and if practicable, the succeeding year, add *subsoil ploughing*, to deep ploughing. Johnston thus sums up the advantages of draining:

"The practical benefits of draining, may be stated generally as follows:—

A. It is equivalent not only to a change of soil, but also to a change of climate, both in reference to the growth of plants and to the health of the population.

B. It is equivalent also to a deepening of the soil, both by removing the water, and by allowing those noxious ingredients to be washed out of the subsoil which had previously prevented the roots from descending.

C. It is a necessary preparation to the many other means of improvement which may be applied to the land.

You will now be able to perceive in what way it is possible, that even light and sandy soils, or such as lie on a sloping surface may be benefited by draining. Where no open outlet exists under a loamy or sandy surface soil, any noxious matters that either sink from above, or ooze up from beneath, will long remain in the subsoil, and render it more or less unwholesome to valuable cultivated plants. But let such an outlet be made by the establishment of drains, and that which rises from beneath will be arrested, while that which descends from above will escape. The rain waters passing through will wash the whole soil also as deep as the bottom of the drains, and the atmospheric air will accompany or follow them.

The same remarks apply to lands which possess so great a natural inclination as to allow the surface water readily to flow away. Such a sloping surface does not necessarily dry the subsoil, free it from noxious substances, or permit the constant access of the air. Small feeders of water occasionally make their way near to the surface, and linger long in the subsoil before they make their escape. This is in itself an evil; but when such springs are impregnated with iron the evil is greatly augmented, and from such a cause alone a more or less perfect barrenness not unfrequently ensues. To bring such land by degrees to a sound and healthy state, a mere outlet beneath is often alone sufficient.

It is to this lingering of unwholesome waters beneath, that the origin of many of our moor-lands, especially on higher grounds, is in a great measure to be attributed. A calcareous or feruginous spring sends up its waters into the subsoil. The slow access of air from above, or it may be the escape of air from water itself, causes a more or less ochrey deposit,\* which adheres to and gradually cements the stones or earthy particles, among which the water is lodged. Thus a layer of solid

\* If the water contain sulphate of iron, the air from above will impart to its iron an additional quantity of oxygen, and cause a portion of it to fall in the state of peroxide. If the iron or lime be present in the state of bicarbonate, the escape of carbonic acid from the water will cause a deposit of carbonate of iron or of lime. Any of these deposits will cement the earthy or stony particles together. Iron, however, is sometimes held in solution by an organic acid (crenic,) which becomes insoluble, and falls along with the iron when the latter has absorbed more oxygen from the atmosphere.

stone is formed,—the moor-land pan of many districts—which neither allows the roots of the plants to descend, nor the surface water to escape.

Hopeless barrenness, therefore, slowly ensues. Coarse grasses, mosses, and heath, grow and accumulate upon soils not originally inclined to nourish them, and by which a better herbage had been previously long sustained. Of such lands many tracts have been reclaimed by breaking up the moor-land pavement; but such an improvement, unless preceded by a skilful drainage, can only be temporary. The same natural process will again begin, and the same result will follow, unless an outlet be provided for the waters from which the petrifying deposit proceeds.

It ought to be mentioned, however, that where a ready passage and escape for the water is provided by an efficient drainage, and especially in light and porous soils, the saline and other soluble substances they contain will be liable, in periods of heavy rain to be more or less completely washed out and carried off by the water that trickles through them. While, therefore, the establishment of drains on all soils may adapt and prepare them for further improvements, and may make them more grateful for every labor and attention that may be bestowed upon them—yet after drainage they must be more liberally dealt with than before, if the increased fertility they at first exhibit it is to be permanently maintained or increased."

He who has wet lands, and thoroughly drains them, confers a benefit upon his neighbors, by improving the salubrity of the neighborhood—he increases the productive capacity of his land a hundred fold—nay, two hundred fold—thereby adding to its market value, and, as a consequence, enhances his fortune.

*The American Pomological Congress*, held in Sept. in Philadelphia, had a very interesting exhibition, and have formed a permanent Pomological Society, the first annual exhibition of which is to be held in Boston, next year—Mr. Saml. Feast, of Baltimore, was elected Vice President of the new Society. A committee was appointed to devise a proper testimonial to be presented to the widow of the late Mr. Downing.

*The Exhibition of the Montgomery Co. Md. State Agricultural Society* was very largely attended, and the result was very satisfactory to the Society—A larger concourse of visitors were on the ground than at any former exhibition, and the improvement in many of the vegetable productions was quite manifest: but the stock present was not equal to expectation. Benj. Hallowell, Esq. delivered the annual address, and was followed by the venerable George Parke Custis, in a brief and eloquent speech—Mr. Custis has also consented to deliver the annual address before the *Prince George's Society*, at the exhibition to be held on the 19th and 20th inst. at Upper Marlborough.

It has been determined to hold the exhibition of the *Charles County Agricultural Society* at Port Tobacco on the 9th and 10th of November; James Fergusson, Esq. is to deliver the annual address.

*A Southern Agricultural Congress* is to be held at Macon, Geo. on the 20th Oct. inst. at which all the Southern States are expected to be represented.

*A State Agricultural Convention* is to be held at Raleigh, N. C. on 18th Oct.

And a *Western Agricultural Fair* is proposed to be held on the waters of the Ohio.

For the American Farmer.

## EXPERIMENTS WITH GUANO & PLASTER.

I beg leave to offer the following report of a series of experiments in relation to the action of guano and plaster combined, compared with guano alone, as a practical answer to the course of remark with which the several communications I have made on this subject have been honored by the editor.

INDIANA, Dinwiddie Co. Va. July 29th, 1852.

Dear Sir:—Last fall I was requested by Mr. Stainback to institute a set of experiments with plaster and guano in various proportions, in order to ascertain the advantage or disadvantage of mixing them together. For this purpose I selected a piece of ground in the field we were sowing in wheat, of as uniform quality as might be. It was in corn last year, and yielded about seven and a half bushels per acre. It is a gray soil, of medium quality, rather compact in its texture, somewhat inclining to be cold. The only improvement that has been put upon it in the last five years, during which time I can speak of my personal knowledge, was an application of marl two years ago.

In the progress of sowing wheat I reached this piece of ground on the 23d of October, and assigned for the experiments 10 beds 74 yards long and 15 feet wide, being precisely 1-13th of an acre to each bed. To insure the greatest degree of accuracy in the results, I weighed and mixed the plaster and guano, put it on the land, attended to the reaping and threshing, and weighed the several products, all with my own hands as far as it was practicable for one person to do it. I do not think there was a loss of 5 lbs. of grain, in the whole, from the time the scythe was put in the wheat until it was finally weighed, with the exception of what might have been left in the heads during the threshing.

It may be proper to state that the amount of guano in each experiment is apparently greater than it really was. It had been ducked during a freshet some ten months previously, and remained in the bags until the time specified. When prepared for use it was quite moist, though in a state of powder. If it had been as dry as it usually is when bought, it would not probably have weighed more than 16 or 17 pounds. But I have chosen to report the weights as indicated by the scales.

The experiments and results are as follows:

- No. 1. Had no manure.
- No. 2. 20 lbs. Guano alone.
- No. 3. 20 lbs. Guano and 5 lbs. Plaster.
- No. 4. 20 lbs. Guano and 12 lbs. Plaster.
- No. 5. 20 lbs. Guano and 18 lbs. Plaster.

The Guano and Plaster for the above experiments were thoroughly mixed 7 days before being applied to the land, and frequently stirred.

- No. 6. 20 lbs. Guano alone.
- No. 7. 20 lbs. Guano and 5 lbs. Plaster.
- No. 8. 20 lbs. Guano and 12 lbs. Plaster.
- No. 9. 20 lbs. Guano and 18 lbs. Plaster.
- No. 10. 20 lbs. Guano plowed in, and top-dressed with 12 lbs. Plaster after the wheat was sowed.

The Guano and Plaster for these experiments were likewise well mixed, and applied immediately. The whole was turned in with a double plow, with the exception just stated.

PRODUCT.		Per acre.
No. 1.	56½ lbs. wheat, equal to	12 bus. 14½ lbs.
No. 2.	125 lbs. wheat, do.	27 bus. 05 lbs.
No. 3.	118 lbs. wheat, do.	25 bus. 34 lbs.
No. 4.	112 lbs. wheat, do.	24 bus. 16 lbs.
No. 5.	109 lbs. wheat, do.	23 bus. 37 lbs.
No. 6.	112 lbs. wheat, do.	24 bus. 16 lbs.
No. 7.	110 lbs. wheat, do.	23 bus. 50 lbs.
No. 8.	102½ lbs. wheat, do.	22 bus. 12½ lbs.
No. 9.	101 lbs. wheat, do.	21 bus. 53 lbs.
No. 10.	103 lbs. wheat, do.	22 bus. 19 lbs.

I am, sir, yours respectfully,

WM. EDWARDS,  
Manager for L. E. Stainback.

#### REMARKS.

Here we have two series of experiments, conducted with great exactness, and confirming each other in a very striking manner. In the first series (from 2 to 5 inclusive) the crop regularly decreases in the inverse ratio to the increased quantity of plaster. In the second series we find No. 6, or guano alone, to exceed No. 5, but in the descending scale there is still a regular diminution of product down to No. 9, in which the greatest quantity of plaster was again used. In No. 10, containing the same proportion of plaster as No. 8, though applied in a different manner, we find the product to be almost precisely the same as No. 8—thus incontestably proving the unfavorable influence exercised by the plaster in every experiment, and invariably in proportion to the amount employed.

Let us analyze these tables a little further. The product of No. 2, in which nothing but guano was used, exceeds the average product of Nos. 3, 4 and 5 (which is 24 bus. 29 lbs.) by 2 bus. 36 lbs. per acre; and is greater than that of No. 5, which had the largest quantity of plaster, by 3 bus. 28 lbs.

In the second series, No. 6, or guano alone, exceeds a like average of the others by 1 bus. 42½ lbs. and surpasses No. 9, containing the most plaster, by 2 bus. 32 lbs.

The tables also indicate conclusively that the longer plaster and guano are mixed together before being put on the land, the greater is the diminution of the crop—the loss being considerably more in the first series than in the second.

And here it may not be inappropriate to advert to two cases formerly reported to me, in which guano was followed by very inadequate effects, that receive a rational explanation from the results of these tables. Plaster was mixed with it early in the summer or spring for the purpose of preserving it from loss, or improving its qualities, until the time of sowing wheat. The crops on the farms to which it was applied were greatly inferior to those on the farms adjoining, which had guano alone, though in one case, at least, the advantages of soil and improvement were decidedly in favor of the land which was treated with the mixture.

Not only, therefore, is the plaster theory not supported by these experiments, but the various scientific instructions which have been given in regard to the best proportions for the mixture, and the time of making it, are equally unsustained.—Dr. Higgins in his Second Report to the House of Delegates of Md., advises that guano should be mixed with plaster “as soon as received,” without regard to the time of application; and he enters into a train of scientific reasoning to prove that it

requires 100 lbs. of plaster to convert into a sulphate the ammonia of 100 lbs. of guano. The Ed. of the Am. Farmer, on the other hand, invariably recommends 25 lbs. of plaster to 100 lbs. of guano, and advises the immediate application. The experiments above reported lend no countenance to any of these theories, farther than to show that those of the editor are less pernicious than the State Chemist's.

We are now able to perceive why so many persons, who have been in the habit of mixing plaster with their guano without making comparative experiments, have expressed entire satisfaction with the results. The lowest yield indicated by these tables—nearly 22 bushels—would be generally considered as highly satisfactory; and being so much better than our unsided soils are capable of producing, a part of the benefit has been very naturally referred to the plaster. But though 22 or 24 bushels may be considered a superb crop, no farmer should be satisfied with it if he can reap 2½ or 3½ bushels, at less cost and less trouble. The increase on a single acre, or a few acres, would be a matter of little importance; but farmers who cultivate wheat as a staple do not often seed less perhaps than 50 acres. On a field of that size the aggregate product would be very materially varied. Taking Dr. Higgins as authority, and adopting his proportions as our standard, we find the difference between guano alone, and guano and plaster in equal quantities, to be 3 bus. 28 lbs.—which on 50 acres would amount to 170 bushels. To treat the guano as he recommends, it would take nearly 6 tons of plaster, the cost of which would be something like \$50. Estimating the value of wheat, one year with another, at a dollar a bushel, we have thus a clear loss of largely over 200 dollars, which, if the farmer were to realize, as he ought of right to do, would enable him to purchase four tons of guano for the further improvement of his land. Calculated on the same principle, the loss according to the system advocated by the editor (being the difference between No. 2 and No. 3) would be 76 bushels of wheat, besides the cost of 3250 lbs. of plaster—equivalent to about \$68 in all.

But it may be contended that there is a compensating benefit to future crops for the diminished product of the first. But this is wholly problematical, to say the least, for it has never been proved; and the paying therefore of from \$100 to \$200 (for such is virtually the case) for a prospective and uncertain benefit, is very much like giving a bird in the hand for two in the bush.

In view of the experiments above detailed, it will not, I trust, be deemed to savor of egotism if I seek to withdraw the attention of my brother farmers from the spells and delusions of theory, and direct it to the safe and practical lessons of experience. As a class, it must be confessed that farmers surrender themselves more unresistingly to novel and fanciful representations than any other body of people. If there is a new variety of wheat, for instance, brought into notice, they are ever ready to pay three or four dollars a bushel for it, and bestow for a while the utmost pains on its culture. After a few years it descends to the tomb of the Capulets, and is remembered on earth no more, or only as a humbug. Such has been the case with a multitude of new plants. But every thing new is not therefore a humbug, however it may be made the subject of it. Guano came recommended to us some eight or ten years ago as a



fertilizer of extraordinary energy, and experience has proved it to be all that was ever said in its favor. But it was not good enough: agricultural chemists told you how to make it better. They have advised you to drug it with plaster, salt, copras, and I know not what besides. It has been treated like a patient suffering under a violent attack of diarrhea, whose bowels required to be locked up to prevent speedy dissolution. You would not, on such advice, and in the enjoyment of the same comparative health, have treated yourself, or a strong robust servant, or a valuable horse, in this unnatural way. Why then should you be trying such experiments on guano, as if nature was incompetent to perfect her own work? It may be asserted without contradiction that all the most striking results which have been reported of guano have been derived from its own unassisted and inherent energies. The experience of Wilmoughby Newton, detailed in the *Am. Farmer* of last September, is a case in point; and the pages of that journal afford nothing on the subject, in connection with plaster, half so striking or satisfactory. Plaster is a highly valuable substance on many soils, if permitted to have its specific action, but it can be made to form no useful alliance with guano. As well might you expect to improve the breed of Arabian horses by crossing it with the winner of a scrub-race, as to add to the value of guano by such a process. You effectually bastardise both. If a chemical combination takes place, then of course the specific effect of plaster is destroyed; and, as we have seen, the active properties of guano impaired. The fact is, there is no "fixer" in nature so good and so appropriate for all ammoniacal manures as an aluminous soil. That such is the case, seems now to be generally admitted by the most scientific men in England and our own country; and according to an article in the July number of the *Am. Farmer*, the credit of making the discovery appears to be awarded to Prof. Way. As I have understood the merits of the case, however, Prof. Way does not claim to be the author of the discovery. A farmer in England, who participated in the opinion generally entertained that the great number of blind ditches would carry off the valuable portions of manure by filtration, took six inches of his soil and put it in a filtering glass, and poured some putrid urine into the glass to ascertain if any fertilizing matter passed through. Finding there was none, and that all was retained in the soil, he communicated the fact to Prof. Johnston, who communicated it to Prof. Way. Whoever made the discovery, however—whether it is fifty years old, or of contemporary date—it belongs to us and to our children; and since the soil is both cheaper and more effectual in fixing the ammonia than any foreign substance, let us not hesitate to rely upon it, as nature designed we should do. If it prevents the ammonia, in a state of solution, from sinking into the earth, so will it equally arrest its escape into the atmosphere, and thus hold it in reserve for the nourishment of such crops as the diligent hand of the husbandman may commit to its generous bosom.

Petersburg, Va., August 3, 1852. T. S. P.

*Note.* It is with great reluctance that I extend these remarks, but there are some passages in the Second Report of Dr. Higgins, bearing on this subject, that require a brief notice. In order to "save a great amount of useless talk and useless writing,"

the author invites all, who are competent, to make the experiment whether or not plaster will combine with the ammonia of guano. Now every body is competent to make this experiment who knows anything about the use of scales; and it has been made by several persons, but less competent perhaps than Dr. H., with opposite results from those he exhibits. But, adds Dr. Higgins, "if the practice of mixing sulphate of lime with ammoniacal manures is useless, let the fact be proved, and the custom abandoned." (p. 77.) I submit then whether the fact is not proved by the above tables, and in a very conclusive manner, not only that it is useless, but that it is detrimental—at least on that description of soil; and I submit also whether Dr. H. does not come in for a share of the "useless talk and useless writing" which he is so quick to discern in others. And here I beg leave to commend to the author his own language: "It is not enough for a farmer to know that the application of a particular substance does well: he should not be satisfied unless he *knows* it is the best for his particular soil which can be used." [The italics are his own.]

Dr. Higgins claims that if the office of Agricultural Chemist had shown nothing else but the proper adaptation of particular varieties of lime to particular soils, the State would derive a hundred times more benefit than the cost has been for its maintenance. Negatively and affirmatively, he makes this declaration in two consecutive paragraphs; and finally confirms it by saying that "axioms admit of no demonstration—self-evident truths need no proof." (p. 45.) How the matter is so self-evident, it is difficult for a plain man to comprehend. The maintenance of the office has probably cost the State some eight or ten thousand dollars, from first to last; and if so, then we have the enormous sum of three-fourths of a million, or a million of dollars, heretofore "annually lost to the agricultural interests of the State" from the want of the information imparted by the State Chemist. This is, of course, the estimate of one naturally prone to magnify the benefits of his office. Suppose now we make a calculation of the "annual loss" that would result to the agricultural interests of the State, if all who make use of guano within its limits were to follow Dr. Higgins' advice, and mix it with plaster in equal proportions. Estimating the consumption of guano at 20,000 tons, we should have 200,000 acres, manured at 200 lbs. per acre, on which the loss at \$4 per acre would be \$800,000—and if the plaster, in every instance, was mixed with the guano "as soon as received," the loss would no doubt be a great deal more. In the absence of accurate experiments in the matter, Dr. Higgins would contend that a similar loss would result by omitting to mix plaster with guano. In fact, there is no necessity, according to his principles, of trying experiments at all—they involve an unnecessary expense to the farmers, and the State should relieve them of the burden; for he asks, "should not the expense incurred by experiments have been saved to them—this knowledge could and should have been afforded." (p. 45.) How afforded? By chemistry, of course—the "science of sciences," as he calls it for "it has a language, every sound of which is truth!" (p. 117.) It is unfortunate for the tenableness of this position that its language, as it reaches us through its various mediums, should be so contradictory; and until some consistency shall

be established, both with itself and with facts, it would be just as reasonable to require us to yield our credence to the verity of the spiritual rappings.

This is only a specimen of the character of Dr. Higgins' Report, than which, from beginning to end, I have never seen a document more obnoxious to criticism. The sincere and earnest votary of science is always cautious and modest—who was ever more so than Newton?—but this Report, in confidence and pretension, bears a stronger resemblance to the exercise of a graduate, than to a patient, scientific enquiry into the mysterious arcana of nature.

T. S. P.

#### EXPERIMENT WITH GUANO AND PLASTER.

PETERSBURG, Va., Aug. 9th, 1852.

To the Editor of the American Farmer—

I regret that the annexed statement did not reach me in time to accompany the paper I forwarded a few days ago. I trust, however, the Editor will cheerfully give it a place in the Farmer, along with the other, on account of its practical bearing on a subject heretofore elaborately discussed in theory; and on which, we have been told, there was a great expenditure of "useless talk and useless writing" in some quarters.

By the way, if my memory does not fail me, the Editor expressed the belief in the Farmer of last December, in some remarks appended to a letter of enquiry from Farmville, in this State, that plaster, applied to his correspondent's land which had been guanoed for wheat, would not retard the ripening of the crop the "one-thousandth part of a second." I am not aware that the most laborious astronomical calculation has ever extended to such an infinitesimal division of time. Notwithstanding the Editor's exactitude, however, we find by the subjoined statement that the ripening was protracted a whole week in consequence of the addition of plaster. Such was partially the case also in the experiments made by William Edwards, already detailed. During the progress of ripening there was a difference of about two days, though it was all harvested at the same time.

In confirmation of the correctness of Mr. Watson's statement, I take the liberty of quoting a few lines from a letter received some time since from my friend, the Rev. James Fife: "I felt very much interested in the discussion you had with the Editor of the American Farmer, and regretted very much that it terminated as it did. One of my neighbors, who held out for the Editor to the last, chiefly for the purpose of convincing me, took a breadth of land through his field, on which he used the guano mixed with plaster after the directions of the Editor. On both sides of this breadth the guano was used without the plaster, and so striking a difference in favor of not mixing guano with plaster I suppose was never seen before. The experiment was made by a man the most careful of all men I ever knew in making experiments."

Will not my quondam friend of the Farmer now make the *amende honorable*? And will not Dr. Higgins qualify, or otherwise apply, some of the complimentary terms he has employed? T. S. P.

ORANGE DALE, near Charlottesville, Va.  
August 5, 1852.

Dear Sir:—I have received your note of the 24th of July, asking me to furnish you with a careful statement of the relative proportions of guano and

plaster, with the results, of the experiment to which you refer. My experiment was on a small scale, but you shall have the information with the greatest pleasure. I staked off a belt of ground in my wheat field last fall, one pole in width, and 28 poles in length, which was the length of that part of my field. I then had furrows run with the plough by the stakes. I was very careful in the measurement, for I measured it myself with a chain, or rather with a line, one pole long. I then weighed out 35 lbs. of guano, which I believe is at the rate of 200 lbs. to the acre, which was the quantity I give to the acre. I then weighed 28 lbs. of plaster, which is at the rate of 2 bushels to the acre, supposing it to weigh 80 lbs. to the bushel, which I think is near the weight. I then had the guano and plaster well mixed together, and sowed on the 28 poles after the wheat was sowed, and had the whole ploughed in with the one-horse plough. The crop was a very poor one throughout, being much injured by the joint worm; but these 28 poles were worse than any alongside, I can safely say by one-half; and green at that when the other was ripe. It marked itself from the time when the wheat began to grow off in the spring till the time it was cut. My friend and neighbor, the Rev. Mr. Fife, saw it at different times during its growth, and can support this statement as to the difference in the wheat while growing, if necessary. When cutting that part of the field, it suited my convenience to cut across the beds; and when the cutters came to that bed I made them step through, without cutting it. It was so green I did not like to have it tied up with the other, and it was a week afterwards before it was ripe enough to cut. So you see I cannot give you the relative product farther than I have already stated it, which I believe is more in favor of the plastered bed than would have proved to be the fact if it had been separately threshed, and brought to the scales.—You are at liberty to publish this or not, as you please, on one condition—and that is, that you will put it in a better form, which I know you can do without changing the substance. I am not in the habit of writing much, and believe I would as soon sow guano as to sit down and write a letter.

Yours respectfully, JOSEPH WATSON.

#### NOTES BY THE EDITOR OF THE AMERICAN FARMER.

We are grateful to our Correspondent, "T. S. P." for hunting up, and furnishing us with, the preceding experiments, as they put an *extinguisher* now, and forever, upon the absurd doctrine which he laid down in his communication to us, published in our April No. Vol. 6, page 352. His words were these:—

"The mixture of plaster with guano, and plaster with manure—for one is as objectionable as the other—has been a standing recommendation for the last six or eight years. The professed object is to arrest the escape of certain ingredients which would otherwise pass off into the air; in other words, to "fix" the ammonia. *That the ammonia is "fixed" most effectually, there can be no doubt; for the roots of the plants are never able to disengage it, at least in its original form.*"

We copy the above from "T. P. S.'s" communication of April, 1851, to call the attention of the reader to the opinion which he therein expressed. We have italicised the words containing it, and we would ask,—what is the obvious import to be placed upon that opinion? and what the legitimate deduc-

tion to be drawn from it? Why, that "T. S. P." maintained, that, if plaster were mixed with guano, or with any other animal manure, it would so effectually fix the ammonia which either might contain, as that the roots of the plants would never be able to disengage it,—or, in other words, that they would never derive any benefit from it. And yet he has clearly shown by the preceding *Experiments*, that notwithstanding the mixing of guano and plaster together, that the roots of the plants were able to disengage the ammonia, and derived most essential benefit therefrom. Ah, but "T. S. P." after denying the competency of the roots of the plants to disengage the ammonia from the plaster, adds the saving words,—“at least in its original form.” Now it is unimportant, whether they get it in its “original form,” or in combination with any other substance, which, in itself, is the food of plants. The question then arises, do the elements of plaster enter into the food of plants? Plaster is comprised of certain portions of lime, sulphuric acid, and water. To say nothing of the latter ingredient, which every body knows is essential to vegetable as well as to animal life,—lime, and sulphuric acid are both found in the grain and straw of wheat, as will be shewn by the following table: There are

	In the grain	In the straw
Of Lime	0.96	2.40
Of Sulphuric acid	0.50	0.37
	1.46	2.77

Making altogether, in every hundred parts of the ashes of the grain and straw of wheat, 4.23 parts, or nearly 4½ per cent. of two of the elements of which plaster is composed. By analysis of the ashes of the wheat plant, we find that both sulphuric acid and lime exists therein, perhaps in the form of plaster as applied. Plaster in its “original form,” is a compound of lime, sulphuric acid, and water,—and we would ask the reader, if the bold opinion of “T. S. P.” were correct, how the elements of plaster could be found in the grain and straw of wheat? In the process of vegetation, the Sulphate of Lime, dissolved by the rains, become available to the growing plants, through the absorptive power, and electric action, of their roots; whether taken up as separate and distinct bodies, is beyond the power of man to determine; but that they are therein found by analysis, is past questioning. And for all the purposes of vegetable growth, we hold it to be unimportant, whether a separation takes place before, or after, the elements of plaster find their way into the roots of the plants, or whether it takes place at all,—we hold it to be unimportant, whether the chemical processes and manipulations, actions and reactions, by which these elements are disengaged, if disengaged, are performed in the earth, or in the roots, leaves, and body of the plant—the result is the same.

It takes from 450 to 500 times the body of the water, to 1 of plaster, to dissolve the latter; whereas 2 parts of water will dissolve 1 part sulphate of ammonia,—and is it not natural then to suppose, that, if a body so hard of solution, as is plaster, can be availed of by the spongioles and roots of plants, that a substance so easy of solution, as is the sulphate of ammonia, would not be much more readily taken up by the roots of the plants? But then “T. S. P.” who modestly gives his own opinion the precedence over that of all the great men of the scientific world, denies that ammonia would

be disengaged in its “original form”—therefore, we ask, where is the proof that it would not be?—We ask, where is the proof that it is necessary that it should be?—We ask, where is the proof that an all-wise Providence, has not imbued plants with the capacity and function of separating and appropriating the different ingredients found in all kinds of manure, organic, as well as inorganic; for they all more or less partake of the character of compounds.

As to what “T. S. P.” means by ammonia “in its original form” we are at a loss to determine.—Does he mean *Sal Ammoniac*?, if he does, that, itself, is a compound, containing 26 parts of nitrogen in the hundred. If he means ammonia as found in guano, it will be necessary to inquire, how much ammonia “in its original form,” according to his views, are found therein.

Voelkel, who has given one of the most accurate analysis that has come under our observation, gives the following as the component parts of Peruvian Guano, analyzed by him:

Urate of Ammonia	9.
Ammonia [none]	
Oxalate of Ammonia	10.6
Oxalate of Lime	7.
Phosphate of Ammonia	6.
“ of Lime	14.3
Ammonia and Magnesia	2.6
Sulphate of Soda	3.8
“ of Potash	5.5
Muriate of Ammonia	4.2
Clay and Sand	4.7
Water and organic matter	32.3

Now then, we ask, what becomes of the strange and untenable pretension set up by “T. S. P.,” as to the necessity of plants deriving the ammonia of the guano “in its original form”? Here, we find that guano in its normal state, contains no already formed free ammonia, but, on the contrary, that it contains the *Urate of ammonia*—uric acid, and ammonia—a substance which is soluble to considerable extent in boiling water, but sparingly so in cold water,—the *Oxalate of ammonia*—oxalic acid, and ammonia—a substance rather more soluble,—*Phosphate of ammonia*—phosphoric acid, water and ammonia—a substance comparatively fixed,—*Ammonia and Magnesia*,—and *Muriate of Ammonia*—*Muriatic acid* and *Ammonia*—all compounds.

So that if this analysis be correct, “T. S. P.” will have to look in vain for his ammonia “in its original form.” What he means we cannot divine—perhaps he had the Carbonate in view. If so, he will have to look farther than the deposits of Peru; for, as no rain falls there, but little or no moisture exists, and it is only after removal, when under the combined influences of heat, moisture, and atmosphere, that decomposition occurs, and the carbonate of ammonia is formed. Guano after it has arrived either here, or in England, or elsewhere, in the latitude of rains, by exposure, may have, and doubtless has, what “T. S. P.” would term ammonia “in its original form;” but we question very much, whether he had any very definite idea of what he meant; for, of a truth, guano, in its natural state, contains the elements of ammonia, but little or no free ammonia formed; its nitrogenous compounds being united with other substances, as we have shown; the which, when decomposed, is susceptible of being converted into the carbonate form; but that is very far from being the condition in which it is “originally found in its

natural state." If we had no other facts or arguments to adduce, the very analysis of guano by *Voelkel*, would fix the ban of absurdity upon "T. S. P.'s" pretensions, and demonstrate to a mathematical certainty, that he had written about a matter with which he was but very little acquainted. What, pray, now becomes of all his writing about ammonia "in its original form"?

We will now dissect the experiments of Mr. Edwards, which were doubtless conducted with every view to perfect fairness, for which, though not communicated to us, directly, we feel indebted to him, as they go very far to sustain all we have heretofore advanced upon the subject at issue between our correspondent "T. S. P." and ourselves.

The first series of experiments from No. 1 to 5 inclusive, give the following results—*Plat No. 1*, without manure, yielded at the rate of 12 bushels 14½ lbs. of wheat per acre—*Plat No. 3*, manured with 20 lbs. of guano and 5 lbs. of Plaster, yielded at the rate of 25 bushels 34 lbs. per acre, thus yielding at the rate of 13 bushels 19½ lbs. of wheat per acre more than did the unmanured plat, upwards of one hundred per cent. more, all of which increase is to be ascribed to the combined virtue of guano and plaster,—and yet in his communication published in this journal in April 1851, "T. S. P." maintained, that, by mixing plaster and guano together, the latter would be so effectually fixed, as that the roots of the plants could never disengage it, or in other words, would not be benefitted by it; here then, is positive proof, that his opinion was altogether unsound; and the beauty of the thing is, that he has furnished the evidence to prove that he spoke without knowledge. Between the product of *plat No. 2*, where 20 lbs. of guano alone were used, and *plat No. 3*, where the same quantity of guano, and 5 lbs. of plaster were used, there is a difference, per acre, of 1 bushel and 31 lbs. in favor of the former; but this difference cannot be chargeable to the action of the plaster; but more properly to the fact, that the guano was ploughed in immediately after being spread on the land, thereby preventing the escape of any carbonate of ammonia which might have been already formed; whereas, the guano and plaster, which was applied to *plat No. 3*, after being mixed together, (the guano in a moist state, having "been ducked during a fresher some ten months previously") was suffered to lie exposed to the air for 7 days, before it was sown. Now, so long as the guano remained in the sacks, moist, little or no loss could have occurred, because the water, with which it was charged, absorbed and prevented the escape of the volatile gases; but from the moment the wet guano and plaster was mixed together, exposed to the action of atmospheric air, decomposition commenced, and though slowly carried on, there was a loss from the flying off of the ammoniacal gases. That the difference in product was not greater, is really a matter of surprise; for there were every element present to encourage decomposition—heat, moisture, and atmospheric air. The moist condition of the guano was favorable to the success of No. 2, the guano being ploughed in immediately after being sown, as water is a most active absorbent of ammonia; but the plaster, until dissolved, could not exert its preventive influence, for the want of sufficient moisture in the guano, to effect the decomposition of the plaster, it requiring from 400 to 500 parts of water to dissolve one of plaster.

If we take the average of the three experiments on *plats Nos. 3, 4 and 5*, it gives us an acreable product of 24 bushels 42½ lbs., and if we deduct the product of the unmanured ground, 12 bushels and 14 lbs. we have an increase of 12 bushels and 28½ lbs. of wheat, per acre, from an admixture of guano and plaster together,—thus demonstrating, how groundless, how untenable, was the opinion of "T. S. P." as to plaster withholding the benefits of guano from the growing crops.

In the second series of Experiments, commencing at No. 6 and ending No. 10, it will be observed, that *plat No. 6*, which had applied to it 20 lbs. of Guano alone, and ploughed in immediately, yielded less per acre than did No. 3, in the first series where 20 lbs. of guano, and 5 lbs. of plaster, were mixed together, and left exposed to the deteriorating influence of the air for 7 days. The latter yielded 25 bushels 34 lbs. whereas the former only 24 bushels and 16 lbs., a difference in favor of the plastered *plat*, of 1 bushel and 18 lbs. per acre.—Here, the difference is in favor of the plaster and guano, but we do not claim for the plaster this excess of product, for in a soil of compact, clayey texture, as we have repeatedly stated before, there is no actual necessity for the use of plaster, or any other agent of fixation, as the adhesive nature of the soil, to claim nothing on the score of its chemical affinities—and all aluminous soils, or those strongly impregnated with iron—possess very active powers of absorption and retention for all ammoniacal gases. Heretofore, as now, we have maintained this ground. Had the soil on which these experiments were tried, been a thin sandy one, equally exhausted, as was Mr. Edwards' "compact" clay, the utility of the admixture of plaster with the guano, would have been manifest, and its conservative properties would have told well in the results of the experiments.

Between the products of experiment *plat No. 6*, where 20 lbs. of guano was applied alone, and *plat No. 7*, where 20 lbs. of guano and 5 lbs. of plaster were applied together, the difference is only 26 lbs. of wheat per acre,—both excellent yields,—the first being at the rate of 24 bushels, 16 lbs. per acre, the other, 23 bushels and 50 lbs., the plastered part exceeding the unmanured plat, nearly 100 per cent., thus affording strong evidence that plaster is not the bug-bear that "T. S. P." represented it to be in April 1851, and that he was speculating without knowing what he was saying.

Experiment No. 10, taken in connection with the others, where plaster was used, confirms the opinion that we have long since formed and expressed, that plaster, when used in conjunction with strong, concentrated animal manures, is more effective when mixed therewith and ploughed in, than when applied as a top-dressing. Nor is it less gratifying to us to find by the result of all the experiments, in which plaster was combined with the guano, that the quantity recommended by us, has proved the successful one.

Our friend "T. S. P.," who appears to be laboring under great soreness of feeling, which we regret, has this paragraph, in speaking of the indications of the tables:

"The tables indicate conclusively that the longer plaster and guano are mixed together before being put on the land, the greater is the diminution of the crop, the loss being considerably more in the first series than in the second."

This accords with our view of the case precise-



ly; for until the plaster is dissolved by water, and a portion of its sulphuric acid liberated from the lime, its affinity for ammonia is inoperative; and, therefore, the longer guano may be left exposed to the action of the atmosphere in our climate, after admixture, the greater will be the loss of its ammoniacal gases.

Again he says:—

"And here it may not be inappropriate to advert to two cases formerly reported to me, in which guano was followed by very inadequate effects, that receive a rational explanation from the results of these tables. Plaster was mixed with it early in the summer or spring, for the purpose of preserving it from loss; or improving its qualities, until the time of sowing wheat. The crops on the farms to which it was applied were greatly inferior to those on the farms adjoining, which had guano alone, though in one case, at least, the advantages of soil and improvement were decidedly in favor of the land which was treated with the mixture."

The facts in the cases stated, are so loosely made, that we cannot understand them. We are told, that the plaster and guano were mixed together "early in the summer, or spring," but whether during the one season or the other, we are left to decide as we may see fit. Now as each of these seasons consists of three calendar months, a vast difference in results were to be anticipated. But the idea of expecting any results from admixture, while both the guano and plaster remained in a dry state—the idea of expecting any benefit from the plaster, until that was dissolved by the rains, after being ploughed in, is as verdant a conceit as one could well desire. Had the guano and plaster been put in close sacks, or tight barrels, after being mixed together, but slight deterioration of the quality of the guano could have taken place, as in that case, the guano would have been removed from the decomposing influence of atmospheric air, and but little, if any loss of its enriching gases would have occurred. Plaster, until its sulphuric acid is separated from the lime forming its other element, is just as inoperative, either for good or for evil, as is so much sand. If the guano and plaster, thus mixed "early in summer, or spring," were left exposed to the atmosphere until used in the fall, it is, indeed, no wonder that its results were as stated by "T. S. P."; for they were just such as were to be expected from so wasting a substance as guano, when thus treated.

With "T. S. P.'s" assault upon Dr. Higgins our State Chemist, we have nothing to do, and all we have to say is, that it is in perfect keeping with his unprovoked attack upon us in the spring of 1851. Dr. H., however, is able to defend himself.

As to Mr. Watson's experiment, we have but few comments to make; its mode and result, does not concern us in the least, and was hardly worth the sounding of the Gong with which our friend "T. S. P." has heralded it forth to our attention.

But for the sake of the truth of history, we feel called upon to deny most positively, that we ever recommended plaster to be mixed with guano, in the proportion of 28 lbs. of plaster, to 35 of guano; our recommendation was 25 lbs. of plaster, to 100 lbs. of guano, a very different thing. And we can but express our surprise, that "T. S. P." should have *endorsed*, as he does, by incorporating it in his letter to us, any such statement; for he knew better. In proof that he did know better, we quote from his communication, which appeared in our

6th Vol. June number, 1851, p. 438. He therein says:—

"You say that plaster and guano should be mixed together in certain proportions. That plaster when mixed in *proper quantities* (the language is emphasized as I quote it,) with active animal putrescent manure, exerts a highly beneficial and conservative influence, we have no manner of doubt. In the proportion of 25 lbs. of plaster to 100 lbs. of guano, the former can exert none other than a good effect."

After thus quoting our language, he remarks, in the same paragraph:—

"I refer to these extracts for the purpose of enquiring on what principle is the proportion determined? Would less be not enough, or would more be injurious? What is the precise condition to be fulfilled?"

To these questions, seeing that the object of "T. S. P." was to divert the attention of our mutual readers from the real matters at issue between us, we gave such an answer as we thought such trifling deserved, in our "Sur-Rejoinder." But as he *mooted* the question of *quantity*, and attempted to predicate an argument upon it, it is not reasonable to presume, that it had escaped his memory. The proof does not rest upon a lapse of memory, for in the above communication, in his attack upon Dr. Higgins, he states, thus:—

"The editor of the *American Farmer*, on the other hand, invariably recommends 25 lbs. of plaster to 100 lbs. of guano, and advises the immediate application."

"T. S. P." therefore, knew, that according to the quantity which we recommended, that 83½ lbs. of plaster were all that was required for Mr. W.'s 35 lbs. of guano. We do not make this disclaimer, with the view of having it believed that we are of opinion that the tardy ripening of Mr. W.'s wheat arose from an over dose of plaster; for on the contrary, we believe that the plaster had no agency in the matter whatsoever; but that it arose from other causes. A difference in the time of sowing; a difference in the texture of soil; a difference in exposure and declination, are, we presume, more properly chargeable with its not maturing as early as the other part of the field. If this experiment of 28 perches was the last wheat sown, several days may have elapsed before it was seeded, after the commencement of sowing. If so, that would at once account for it. We have scarcely ever seen a wheat field of any considerable extent, where the grain all ripened at the same time, and never expect to see one. As well might our correspondent, "T. S. P.," charge plaster with generating the "joint-worms" that played such sad havoc with Mr. W.'s crop of wheat, as to allege that it retarded its ripening; for, of a verity, it had no agency in either the one or the other. *Lime* and *Sulphuric acid* enter into every crop that grows, and as these are the constituents of plaster, in presenting these to his wheat crop, Mr. W. furnished it with food in which it delighted.

Our correspondent calls upon us to make the "*amende honorable*." If we were conscious of having placed ourself in a position to require it, there is no man living who would take more pleasure in doing so than ourself. In the whole of this discussion we have acted on the *defensive*, and until assailed in our own columns, we never wrote a word, although we had seen our recommendations assailed under the signature of "T. S. P." In some of the papers of his own state. To be sure,

he did not name the editor of the American Farmer; we, nevertheless understood his drift just as well as if he had. But having no taste for controversy, we forebore until he brought the war home to our own door, and even then, we contented ourselves, in the first instance, with a brief reply.

In "T. S. P.'s" communication which appeared in our number for July, 1851, p. 58, he charged us with having written and published a eulogistic notice of our "Sur-Rejoinder." In our reply to the communication in which this ungenerous imputation appeared, we stated, that the writer of the "Sur-Rejoinder," neither wrote, nor advised the writing, of the paragraph calling attention to it, and is, therefore not accountable for it." Notwithstanding this explicit disavowal, made by us in July, "T. S. P." repeated the unworthy insinuation in November. Now as we would as lief commit an act of larceny, as write an article laudatory of anything we had ourselves written,—and as we did not know that it was the intention of Mr. S. our publisher, to prepare the article in question—never knew anything about it until after the paper had been published some days, we think the *amende* is due to us. It is bad enough for one individual to make an unworthy imputation against another's honor, upon mere suspicion; but to repeat it after an unequivocal disavowal—after a positive denial—manifests a predetermination to persist in injury, injustice, and wrong, that is utterly at variance with every code of morals which govern among men of well regulated minds.

#### GUANO AND PLASTER.

To the Editor of the American Farmer—

In the discussion which was carried on in the columns of the Farmer during the past year on the subject of mixing Plaster and Guano, there appeared to be one important ingredient wanting in order to satisfy practical men, which was, the report of careful *Comparative* experiments; and that not for one season only, but for several successive ones. A very skillful farmer used to say, that "no Agricultural experiments should be reported as successful, until it had been tried three years." Some editorial remarks in the July No. of the Farmer struck me as very much to the point.—They were to this effect; that experiments unless carefully tried, and of long continuance, were frequently deceptive in their results. Now, although the results from the application of guano alone, have been very satisfactory with me, and the evidence which had come to my knowledge in favor of, and against the mixture, preponderated against it, yet, if, from careful experiments, it was proved that the most profitable mode of using guano was by combining plaster with it, I would at once abandon all preconceived opinions and adopt the mixture. In accordance with this view, I have instituted some experiments, and now report the result of the first one. My intention is to repeat the experiments this fall with the addition of sowing one land with plaster alone. This will probably show, whether any part of the result is to be attributed to the direct action of the plaster on the wheat, or to the combination alone.

I would suggest to my brother farmers, the importance of trying comparative experiments carefully, for themselves—for, although one kind of manure may suit my land, the same kind may not be best for theirs, should their soil be differently constituted. In this very plaster and guano question,

notwithstanding the yield with me has been much greater from the combination, yet I have been informed by a practical farmer who lives but a few miles from here, that the yield of wheat with hip from plaster and guano, which had been mixed eight days, was not more than half as much as from guano alone, but when he mixed them and plowed immediately, the yield was about equal to the guano itself—the quantity of guano being the same in each experiment. And one of my brothers informs me that he applied the mixture to a land running through his wheat field with the same quantity per acre of guano alone on either side, and that the crop where the mixture was applied was much inferior to the other. The above experiments were tried at the same time that mine was, but on soils of very different character—mine, being a red loam with but little clay or sand, but with a large proportion of isinglass—while theirs have a much larger proportion of clay; very little of the isinglass, and one of them in particular may be termed a stiff "white oak soil."

Respectfully, CALES STABLER.

Montgomery Co., Md., 8th mo. 23d, 1852.

#### EXPERIMENTS.

Lands 83 by 6 yards—498 square yards. The guano and plaster mixed 9th mo. 20th, '51, and that, as well as the guano by itself, moistened as we usually do it for sowing—10th mo. 1st, each parcel shoveled over on a plank floor, so as to thoroughly incorporate them, and then returned to the barrels—10th mo. 10th, (20 days after mixing) sowed the wheat with the different parcels of manure, shoveled them in, and rolled the grounds.

		lbs. Wheat.	Per acre.
No. 1.	No manure	69½	11 bus. 35 lbs.
No. 2.	½ bus. Guano	113	18 bus. 18 lbs.
No. 3.	½ " G. ½ bus. Plaster	147	23 bus. 28 lbs.
No. 4.	½ " G. ½ bus. Plaster	154	24 bus. 56 lbs.
No. 5.	½ " G. 1 bus. Plaster	151	24 bus. 27 lbs.

#### QUANTITIES OF MANURE PER ACRE.

No. 1.	No manure.
No. 2.	250 lbs. Guano.
No. 3.	250 lbs. Guano and 2½ bushels Plaster.
No. 4.	250 lbs. Guano and 5 bushels Plaster.
No. 5.	250 lbs. Guano and 10 bushels Plaster.

NOTE.—As the ground is laid down to grass, in order to place each strip on an equality as it regards the Plaster, Nos. 1, 2, 3, and 4 have had sown on them since harvest, as much plaster as would bring them up to No. 5; to wit, one bushel to the strip, or 10 bushels per acre. The effect to be observed.

C. S.

Note by the Editor of the American Farmer.—We sincerely thank Mr. Stabler for the report of his experiments. His communication was handed to the publisher before our last issue, but being too late for that number, it was retained by Mr. Stabler till late in the month, and we did not see it until the proof of it was sent us, or we should have made extended remarks upon it—but as it was late in the month before we received it, the time and space were not allowed us to do so, and we must, therefore, content ourselves with the remark, that it entirely demolishes our friend "T. S. P.'s" pretensions, and that the agricultural community are much indebted to him for the thoroughness of his experiments.

Wm. Martin, esq. of Harewood, Balt. Co. has presented to the State Society, a lot of baled Hay—We hope his example, and that of Mr. Hewlett, will be followed by others, prior to the Show.

## WORK IN THE GARDEN.

## OCTOBER.

It is due to those LADIES who take an interest in the FAIR OF THE MARYLAND STATE AGRICULTURAL SOCIETY to state, that the fondest anticipations are indulged in, that they will exert themselves to have their department of the Exhibition so filled, as to excite universal admiration. Large as the calculations are of the aid to be derived from them, we are very certain that they will more than be realized; for where duty points the way, woman never yet was known to disappoint expectations, when those expectations were based upon reason, and looked to the performance of good works.

Now let us briefly look into the garden to see what is to be done there.

## SPINACH.

Your advancing crop of spinach should be weeded and thinned out, so that the plants will stand 4 or 5 inches asunder.

## LETTUCE.

Any lettuce plants that are of sufficient size, should be placed on a warm border facing the south, of such dimensions as to be covered by a frame on the approach of frosts.

## SETTING OUT CABBAGE PLANTS.

In order that we might induce you to take the preliminary steps to secure early cabbages next summer, we advised you last month to sow cabbage seeds of various sorts, promising you when the proper time arrived, that we would tell you how to set the plants out to stand the winter, and as that time has now nearly arrived, we cheerfully redeem our promise.

About the 10th of this month, select a dry loamy bed with a southern or south-eastern exposure. Your bed selected, spread over it about three inches in depth, of stable or barn-yard manure, over that freely sow ashes, dig it in a full spade in depth, taking care to rake as the spreading proceeds, in order that the soil may be well pulverized. Your bed being dug and raked, stretch your garden line across it, from east to west, three feet from the edge, then take a hoe, and with the edge of it form a ridge 4 inches in depth, pat the sides of ridges with the hoe to keep them from crumbling down; then draw another line three feet from the first ridge, form another ridge, as before, and so continue until you have ridged out your bed. On the north side of the ridges set out your plants, about midway down from the top, 6 inches apart; then dust your bed over with a mixture of equal parts of plaster and ashes. This close planting is necessary, to allow for loss from the frosts of winter.

Towards the latter part of next month, strew stable manure along the bottom of the ridges, along the line of your plants. Next spring as soon as it is time to work them, draw the earth from the tops of the ridges down upon the manure in the bottoms, as the first working of the plants, working at the same time between the rows with the hoe, to lighten up the ground, and extricate any weeds or grass that may have started up. When the time arrives, thin out the plants, so as to stand 2 feet apart in the rows. This thinning out you may so arrange, as to withdraw surplus plants for sprouts or greens, taking care not to delay their withdrawal so that the plants to remain will be stunted in their

growth. If this thinning is conducted judiciously, you may secure a full supply of sprouts and celeris, without in the least interfering with the plants to be left for heading.

At the first working strew a mixture of ashes, salt and plaster over them. When you have thinned the plants out so as to stand 2 feet apart, give them another working, taking care to give them a slight hilling. Repeat this operation two or three times, and you may rest assured of a fine crop of early cabbages. Should the weather prove dry, see that your gardener waters the plants freely. If you would make him give them two or three doses of soap suds, their growth would be thereby greatly promoted, as the cabbage delights in such food.

## ENDIVES.

These should be tied up for blanching, and have the earth drawn up around them.

## CAULIFLOWERS AND BROCCOLI.

Your Cauliflower and Broccoli that you expect to flower this month, must be worked. Your plants will need the protection of glasses at night.

## MINT.

Mint plants intended for winter use, should now be set out in frames.

## ASPARAGUS BEDS

As soon as the asparagus turns yellow, it should be cut down even with the ground. Clean off all the asparagus tops, weeds, and grass; put the whole in pile, and when dry enough, burn them. Then strew about two inches in depth of rotten dung between the rows, fork it in, and rake the bed. In early spring, give the bed another such dressing of rotten dung, rake, and strew over the bed a free dusting of a mixture of equal parts of salt and ashes.

## CELERY.

Continue the earthing up of your celery for blanching.

## RHUBARB AND SEA-KALE.

Seeds of these should now be sown.

## SHALLOTS, GARLIC, CHIVES.

Set these out early this month.

## ONIONS FOR SEED.

These should be set out.

## RASPBERRIES.

New plantations of these may be made about the middle of the month.

## GOOSEBERRIES—CURRANTS.

Towards the latter part of this month, plant out gooseberry and currant bushes—distance apart 6 feet.

Cuttings of these may be planted on a warm southern exposed border.

## STRAWBERRY BEDS.

These should now receive their winter dressings, consisting of a compost composed of 7 parts rotten dung and 1 part ashes—the dressing should be a slight one. Before being applied, the bed should be cleaned of weeds and grass.

*Large Yield of Wheat.*—Perry Smith, of Sweden, Monroe county, New York, writes to the Rochester Advertiser, that he has raised this year from 10½ acres, 502 bushels of wheat of which 8 acres went 50 bushels to the acre—equal to 400 bushels. The other 2½ acres went 40 bushels to the acre. The wheat was what is called "Soule's Wheat."



BALTIMORE, OCTOBER 1, 1852.

## TERMS OF THE AMERICAN FARMER.

\$1 per annum, in advance; 6 copies for \$5; 12 copies for \$10; 30 copies for \$20.

ADVERTISEMENTS.—For 1 square of 12 lines, for each insertion, \$1; 1 square, per ann., \$10;  $\frac{1}{2}$  column, do. \$30; 1 column, do. \$50—larger advertisements in proportion.

Address, SAMUEL SANDS, Publisher, At the State Agricultural Society Rooms, No. 138 Baltimore st. over the "American Office," 5th door from North-st.

## THE 5th ANNUAL CATTLE SHOW AND AGRICULTURAL & HORTICULTURAL EXHIBITION

OF THE

Maryland State Agricultural Society,

Will take place at the beautiful grounds of the Society, on North Charles street extended, in a direct line from Washington's Monument, on

*Tuesday, Wednesday, Thursday and Friday,*  
The 26th, 27th, 28th and 29th Oct. 1852.

From every indication, the Exhibition will far excel that of any preceding year. To meet which, the Committee of Arrangements are erecting a considerable number of additional Stalls for Horses and Cattle, Pens for Sheep and Swine, and Coops for Poultry.

The applications for stalls and pens are already far beyond what have ever before been received up to a week before the Show, and we think we can promise a finer display in every department, and have no doubt of a larger attendance, than has ever before been extended to our Exhibitions.

## ORDER OF THE EXHIBITION.

On Tuesday morning, at 10 o'clock, the Judges will enter upon the performance of their duty of inspecting and awarding Premiums, except in the cases hereinafter mentioned. ON THAT DAY NONE BUT MEMBERS OF THE SOCIETY AND THE JUDGES WILL BE ADMITTED TO THE GROUND.

On Wednesday, at 12 o'clock, the Horses of all classes contending for premiums, will be brought upon the Horse Track for inspection and judgment.

On Thursday, at 10 o'clock, trials in the draught of Horses, Mules and Oxen will be made at the Horse Track, for which appropriate means will be provided.

At 12 o'clock on the same day, the PLOWING MATCH will take place.

On Friday morning, at 9 o'clock, the articles contained in the classes "Dairy and Honey," "Fruits," "Domestic Wines and Cordials," "Household Manufactures" and "Bacon Hams," will be inspected and judged.

At 12 o'clock, the ANNUAL ADDRESS will be delivered, and immediately after the address, the reports of the Judges will be made and the premiums awarded and distributed.

MEMBERSHIP.—All exhibitors must be members of the Society—on the payment of \$3, a certificate

of membership will be given, which will be exchanged for a badge at the Treasurer's office on the ground, or at the Secretary's office in the city—Members are cautioned against losing their badges, as they will not be replaced. Members can pay their annual dues to W. F. Lightner, Treasurer, or to the Secretary, at the Society's Rooms. Exhibitors must procure membership tickets before the stock or implements and machinery enter the grounds.

ENTRIES.—All animals to be on the ground, on or before the 25th—Notice should be given to the Secretary, on or before the 22nd Oct. of the number, and a particular description of the stock to be exhibited, in order that accommodations may be secured. It is considered that every exhibitor who asks to have stalls secured to him, thereby pledges himself to fill the number so secured.

The grounds will be open for the reception of stock on and after Saturday, the 23d October.

Visitors and Exhibitors.—The various railroad and steamboat companies have been solicited to grant the usual facilities, and most of them have already responded to the request, and will convey stock and machinery to the Exhibition free of charge, as heretofore, and issue round trip tickets for passengers.

THE WEEK OF THE AGRICULTURAL FAIR.—We shall have a stirring time of it in Baltimore during the week of the Exhibition.

1. In addition to our CATTLE SHOW, which will be on a scale probably unsurpassed in this country, we shall have open at the same time.

2. The MECHANICS' INSTITUTE FAIR, in the new Hall, which will be then completed—this exhibition is expected far to exceed that of last year also.

3. The SONS OF TEMPERANCE are to have a grand Convention and Procession—and

4. The two great POLITICAL PARTIES are expected to have "grand Rallies" during the week, when their banners, transparencies, and all the paraphernalia of the campaign will be brought into requisition, and the most distinguished orators on both sides will address the people—Other matters will be likely to attract attention at the same time. It will no doubt be one of the most interesting seasons ever witnessed in this city.

OUR PRIZE LIST.—It will be remembered that our prize list for the largest number of subscribers to the "Farmer" is open to the evening before the commencement of the Cattle Show—A chance for a handsome premium is thus offered, which should command many competitors—No name will be counted, for which the money has not been paid at the time of closing the contest. See list in our last.

GAS HOUSE LIME.—The Gaslight Co. it will be seen by its advertisement, offers for sale the Gas-house lime from their establishment in this city—This lime has been found very valuable, and the low price at which it is offered, should make it an object to farmers.

IMPROVED SUPER-PHOSPHATE OF LIME.—We refer the reader to the advertisement of Mr. N. E. Berry, agent of the manufacturers, offering this fertilizer to the public—It is prepared under the direction of Prof. Mapes, and we have seen some wonderful accounts of its value.

GRAIN FAN.—We refer to the advertisement of Messrs. J. Montgomery & Bro. who have established themselves in this city for the manufacture



of Fanning Mills.—We would recommend to farmers to give this mill an examination—it will be at the State Cattle Show to compete for the prize.

**THE STATE CATTLE SHOW—Guenon on Milch Cows.**—In the communication of Mr. Harvey, of Pa. on another page, it will be seen that he intends exhibiting at our coming Show some of his stock selected and raised in accordance with the principles laid down by Guenon.—We have no doubt it will give Mr. H. much pleasure to communicate to those visiting the Show, any information in his power, on the subject of selecting good milkers.—The instruction thus to be obtained, will, of itself, we think, be a stimulus to many to visit our Exhibition, and will many-fold repay for the time and expense of coming.—We are aware we have assigned Mr. Harvey a laborious task, for which our only excuse is, our confidence in his public spirit, which will induce him to impart the desired information.

#### REVIEW OF THE TOBACCO & GRAIN MARKETS.

*Prepared for the American Farmer by J. W. & E. Reynolds.*

The market for Tobacco since our last monthly report has been very animated, and prices have gradually and steadily advanced, so that now the prices for some descriptions are nearly as high as they were in the winter of 1850 and '51, while those for other kinds are very little higher. There is still manifested great anxiety on the part of the regular dealers and others also, to purchase at rates, viz:  $\$3\frac{3}{4}$  to  $\$4$  for frosted;  $\$4\frac{1}{2}$  to  $\$5$  for good sound leafy common;  $\$5\frac{1}{2}$  to  $\$6$  for dark and dingy red, and  $\$7$  to  $\$8$  for good bright red and yellow, and  $\$9$  for *fine*. Some entire crops have been sold lately at an average of  $\$6.12\frac{1}{2}$  to 6.50.

The stocks of Maryland Tobacco in agents' hands here, are very small, and as there is but little to arrive from the country this year, we feel very confident that prices will not decline, and shall not be surprised at a further advance. The inspections up to the present time this year of Md. Tobacco is about 22,000 hhds., being about 1000 hhds. more than at the same period last year.

**Grain.**—The price of Wheat during this month has been very fluctuating; at one time good white sold at 85 to 90c; afterwards at  $\$1.10$  to  $\$1.15$ , and now it sells at 96c to  $\$1$ . Red ditto, 85 to 90c.

Notwithstanding the advice contained in our last report, to farmers, to have their wheat well *cleaned* and *perfectly dry* when shipped, a large majority of what has been received from the Southern counties of Md. has been "*tough*" and *badly cleaned*, causing its owners a loss of 10 to 15 cts. per bush.

Corn has been selling at 60 to 64c for white, and 65 to 67c for yellow, and we quote sales now at 60 to 63c for the former, and 63 to 65 for the latter. Rye at 70 to 73c. Oats at 30 to 33c.

**Guano.**—The importations into this port for August were as follows: Ships Sunbeam 1200 tons; Catharine 607; brigs Mary Elizabeth 200; Similar 611—total 2618 tons—for Sept. none. In consequence of the unexpected detention of vessels from Peru, some of which have put into South American ports in distress, the supply has been cut short—and the price has gone up to  $\$50$  per ton of 2000 lbs. and but little in the market. The dealers have been obliged to fill contracts, made some time since, by purchasing at an advance on their contract prices. Patagonian is selling at  $\$28$  a  $\$33$ , according to quality—and Mexican  $\$25$ .

**STATISTICS OF THE CROPS.**—In our last, we called upon the Committee selected by the State Society, to bear in mind the object of their appointment, and urged upon them to be prepared to report at the coming meeting of the Society. We have since received a communication on the same subject, and regret our inability to give it entire. The writer remarks: that the importance of this information at the present time cannot be overestimated, "when we have the most alarming reports of the spread of that direful malady by which the Potato crop in some sections of the country seems destined to be almost destroyed. The corn crop in parts of our own, and some of the neighboring states, is reported to be more than an average product, whilst in other sections it has suffered greatly from the effects of drought, and other causes. We are also much in want of more exact information in reference to the last wheat crop. The question may be, whether the present low price of this staple is the result of the abundant supply on hand, as is said by some, or is occasioned by the bad condition in which much of the wheat is sent to market, as is alleged by others. The Tobacco and Hay crops are also not to be forgotten in their inquiries and observations. If on the one hand, the Potato, which enters largely also into the domestic consumption of our own country, be so greatly injured, will its deficiency be compensated for by the excess of product (if such there is,) of wheat and corn? Of course, it is not implied that any such results could be occasioned by its entire destruction in our happy land, as would be caused by a partial loss of the crop in the Old World, but a deficiency in that crop, must be made up by that of wheat and corn, and of these by far the larger portion of the latter."

We hope the gentlemen composing the committee, will not fail to attend to the duties imposed upon them, and report at the annual meeting. The Committee comprise:

For St. Mary's County—Col. H. G. S. Key, J. H. Sothron. Charles County—Gen. John G. Chapman and Maj. Wm. B. Stone. Prince George's—Col. W. W. Bowie and J. D. Bowling. Calvert Co.—George W. Weems and Daniel Kent. Anne Arundel County—Col. Geo. W. Hughes and N. B. Worthington. Howard County—Geo. W. Dobbin and Gen. J. W. Tyson. Montgomery—A. Bowie Davis, E. J. Hall. Frederick—John Lee, Davis Richardson. Washington—David Brumbaugh, Andrew Rench.—Alleghany—Col. C. M. Thruston, Dr. Samuel P. Smith. Carroll—Geo. Patterson, Col. Ege. Baltimore Co.—Col. Wilson M. Carey, Henry Carroll. Harford—Col. Ramsay McHenry, John H. Price. Cecil—Rev. James McIntyre, Major Thomas M. Forman. Kent—George Hollyday, Wm. T. Smith. Queen Anne's—Dr. Wm. H. DeCourcy, Alexander W. Thompson. Talbot—M. T. Goldsborough, Jos. Price. Caroline—Jesse Pearson, Thomas Stewart. Dorchester—Wm. T. Goldsborough. Somerset—Isaac D. Jones, W. H. Jones. Worcester—Gen. W. H. Handy, Wm. W. Purnell.

To H. M. B. of Winchester, Va. Your communications will appear in our next.—Several others on hand, intended for this number, we are compelled to omit.

Mr. Calvert requests those who have lists of subscriptions to the Md. Agricultural College, proposed to be established in this State, to hand them in at the Annual meeting of the State Society.

We have received from the Executive Department of Maryland, three heads of wheat, being a part of a lot which was forwarded to the Governor from the Patent Office for distribution among the Agricultural Societies of the State—One is "from a cluster of 43 heads to one root, grown on the American River"—the second, "wheat from Yuba River, California"—and the third, "bald and bearded wheat, cut green, from W. L. Van Dorin, American River."

**OHIO STATE CATTLE SHOW.**—The result of the Show just held in Ohio, has been successful far beyond any Exhibition which has preceded it.—The total receipts during one of the days, amounted, it is said, to \$14,500, and the number of persons within the enclosure to near 50,000. The display of cattle was very great, and the exhibition of Poultry attracted much interest. The receipts were \$6000 more than last year.

**POULTRY.**—We have been furnished by Mr. Bowers, of this city, with a description of the Royal Cochins China, and the Curacao Fowls, specimens of which in their purity, will be exhibited by him at the Cattle Show.—We regret our inability to publish it at this time.—These birds will command much attention at the Show—indeed, this department is expected to be of unusual interest. Mr. Bowers, whose last display was very fine, will this year have forty different varieties on the ground—and many others will make beautiful displays.

**HORTICULTURAL EXHIBITIONS.**—The Maryland Horticultural Society held its second annual exhibition on the 23d to 24th ult. and produced one of the most beautiful displays ever witnessed in this or the neighboring States. We shall publish the list of premiums, &c. hereafter.

The Horticultural Society of Delaware opened its exhibition at the same time. We had the pleasure of being at it for a little while, and was delighted with the elegant display of fruits, plants and flowers. Among the former was a number of the specimens exhibited at the Pomological Congress.

#### GUENON'S BOOK ON MILCH COWS.

CHADSFORD, Brandywine, Del. Co., Pa., }  
August 17th, 1852. }

To the Editor of the American Farmer—

DEAR SIR.—It has been about six years, I believe, since a book, called "A Treatise on Milch Cows," by Mr. Francois Guenon, was translated from the French by N. P. Trist, Esq., and republished in this country. It purports to teach a method of ascertaining the milching qualities of cows, by the manner of growth of the hair on the hind part of the udder and thighs.

The author asserts that not only can the good milkers be distinguished, by this rule, from the very bad; but that all the shades of difference can be thus ascertained with great certainty. Of course, allowances are to be made for differences in age, size, food, &c. As there does not appear to be any natural connection between the milking qualities of the cows, and the growth of the hair on their udders, farmers and dairy-men, in this part of the country, were at first disposed to rate this as one of the humbugs of which this age is so remarkably prolific; which, I may remark, appear to bear, in numbers

and impudent pretensions, about the same proportion to the number and importance of real scientific discoveries that they have done in any other age.

A brief examination and trial, will always separate the grain from the chaff. The false is rejected, and the true is accepted, to become, in its turn, a starting point for new discoveries.

Years of trial has sanctioned and vindicated the claim of Mr. Guenon to a share of that admiration and gratitude which is accorded to those benefactors of their race who discover important truths in science.

In the eastern portion of Chester and Delaware counties, are many extensive and fertile farms, managed by intelligent and skilful dairymen, who supply the Philadelphia market with fresh butter, milk, and cream. Of course the discovery of Mr. Guenon, would be of great value to them if true. Some of them commenced, with great doubts, and much secrecy, lest they should be laughed at by their neighbors for their credulity, to compare the "escutcheons" on their cows with the drawings in the book. This was testing the matter speedily and fairly, for every dairy-man knows which are his best milkers. Soon their secrecy had another motive. It was to conceal this important knowledge from those who might become their competitors at the sales of cows. For, in every case, the escutcheons delineated in the book as good cows, was found to correspond with the natural marks on the best milkers in the herd. Further investigations have shown the "Guenon method," as it is called here, is true in the minutest details. It has been thoroughly tested by many of our most intelligent dairy-men and farmers, who, being actuated by no other motive than to advance their own interests, have given the subject a careful and candid examination. Every person who investigates the subject, becomes convinced of its truth and importance. Some of my neighbors have procured good herds, by buying the best marked two-year-old heifers, that are brought here in droves from New York and Ohio. The very best marked cows are far from common, but as the escutcheon can be distinguished on the calf, the application of the rule to the selection of the heifer calves for raising, will give an abundance of good cows.

The mark is equally plain too, on the bull, and breeders are thus enabled to proceed understandingly in their selection of animals to breed from. In short, a well marked cow in our section of country, will command from 30 to 50 per cent. over one not well marked, yet in other respects of apparently equal value. Guided by the light of this valuable discovery, I have selected from the herds of C. L. Holcomb, of Delaware, L. P. Morris, New York, and elsewhere, a few superior marked Devonshire, Ayrshires and Durhams, for breeding purposes. Relying on the well known physiological law, that progeny resembles the parents, of both sexes, who correspond in this one respect, however much they may differ in others, I confidently expect to raise some choice milkers. In due time you shall hear the result of the experiment.

It is my intention to exhibit at the next agricultural exhibition in Baltimore, some well marked heifers and a bull, together with a crib or bin for hay, &c., such as is used in every well managed barnyard in our county, but which, I believe, is not of general use elsewhere.

Respectfully yours,  
CHAT. HARVEY.

**New Castle (Del.) Agricultural Society.**—We attended the opening of the Cattle Show of this Society on the 22d ult.—the stock and agricultural productions were just arriving, and the Show bid fair to be very interesting—the arrangements were very complete, and on a liberal scale. A considerable quantity of the Stock on exhibition is to be at our State Fair—Delaware will be well represented here this Fall.

**Agricultural Education.**—A meeting of a number of the most eminent men of the State of Delaware, farmers and others, friends of education, took place at the residence of C. P. Holcomb, esq. on the 21st Sept. We had the pleasure of being present at the meeting, by invitation, and was highly pleased at the indications of success which were presented, of introducing a Professorship of Agricultural Chemistry, &c. into the Newark College. Our space will not permit us to say more on the subject, but we will refer to it hereafter.—We wish "God speed" to the object in view, and feel confident that a little perseverance will accomplish it.

*For the American Farmer.*

### PERUVIAN GUANO AND THE LOBOS ISLANDS.

This great article of trade and agricultural improvement is the excrementitious deposit of marine birds. These birds are of many varieties, but the most important are Piqueros or Boobies, Pelicans, Marine Geese, Gulls and Puffins. They are found in immense numbers on the Peruvian coast, making their nests in holes, amidst the accumulations of this manure, and breeding abundantly. Though the killing of these birds is prohibited by the laws of Peru, it has been found difficult to prevent the Indians from using them as food, and until very recently it was common to see canoes loaded with piqueros, puffins, &c. and their eggs, which were sold in open market for daily consumption. So far back as the time of the Incas, it was strictly prohibited to enter the islands in breeding time, and killing the birds at any time, on or off the islands, was forbidden under heavy penalties. As it never rains under the serene sky of the Peruvian coast, the guano deposits are not leached as in other climates, and hence the superior value of Peruvian Guano.

The localities of the guano deposits extend from 8° to 21° S. of south latitude. The islands and promontories on which it is chiefly found, are commonly of "primitive rock, granite, mica, gneiss and other quartzose and feldspathic beds.—The guano is usually disposed in layers, more or less thick, of a horizontal direction."

In Peru, they divide the guano localities into three sections, the southern, central and northern. The localities have been surveyed and mapped by order of the government, and the deposits have been bored, to ascertain their depths and calculate the supply of guano which they afford. In the southern section, in 20° 23' S. L. is the promontory of Punta Grande, four leagues from Iquique, where the guano is covered by thick layers of sand, overlaying it to such a depth that the deposit is called subterranean. This seems to have been caused by its proximity to the Morro de Tanapaca, a sort of sandy hill. The amount of this deposit has not been calculated, but it is supposed to be immense from the great quantities known to have been

taken from it; and it is believed to have been worked in the time of the Incas. The following is a tabular statement of the localities and the supply of guano which they afford, taken from the report made on the subject to the government of Peru:

SOUTHERN SECTION.			
	Deposits.	Cubic Yards.	Tons.
	Chipana,	861,904	280,609
	Huanillos,	3,235,010	1,012,505
	Punta de Lobos,	2,921,580	1,460,790
	Pabellon de Pico,	5,950,000	2,975,000
	Puerto Ingles,	2,585,020	1,392,510
			7,921,407
CENTRE CHINCHA ISLANDS.			
	Northern Islands,	15,900,000	7,600,000
	Middle,	13,900,000	6,450,000
	Southern,	8,400,000	4,200,000
			18,250,000
NORTH.			
			18,250,000
Lobos de Tierra.	Isla Principal,	150,900	75,450
	Punta Corecovo,	224,760	112,380
	Isla Bermeja,	317,556	158,778
	Felix Gonzales,	36,900	13,100
	Isla Colorado,	236,300	118,150
			476,858
	Lobos de Fuera,	531,426	265,713
	Guanape,	159,620	79,810
	Perrol,	61,400	30,700
			376,223
	Total cubic yards,	54,050,966	27,024,493
	Southern Section,		7,921,407
	Centre Chincha Islands,		18,250,000
	Lobos de Tierra,		476,858
	Total Tons.		27,024,493

These are not all the deposits: for there are islands of the sea, not surveyed and mapped, by reason of the difficulty of approaching them—large subterranean deposits at Iquique and the Punta de Lobos of the South, and other supplies unknown to the public, but which have been brought to the notice of the government of Peru by Don Geronimo Fernandez, and which are said to be as rich as those of Chincha.

It has recently been urged upon the British Government, and that of the U. States, by merchants of the respective countries, that the Lobos (or Seal) Islands cannot properly be claimed by Peru—that they are free to all nations, whose ships should be protected by their respective governments in the right to take guano from them without molestation. This claim is founded on the fact that the islands are uninhabited and uninhabitable—that they are situated more than a marine league from the main shore of Peru, and that they were not named in the enumeration of the dependencies of Peru, when that republic established its present form of government and defined its territories.

The islands of Lobos de Tierra are 10 miles from the Peruvian coast—those of Lobos de Fuera are 35 miles; and they certainly have not been brought under the dominion of Peru by that sort of occupation which is proved by permanent habitation, since they are not capable of such occupation. But the Peruvian government claims that during the Spanish dominion they were always held to be under the viceroyalty of Peru, as since the period of independence they have been subject to the government of the republic—that the republic has enforced its jurisdiction in many ways—has had all the occupancy of these islands of which their character will admit—has made and enforced various decrees respecting them, to which other nations have submitted.

Old Spanish maps and charts of unknown date, but undoubtedly ancient, represent them as part of Peru, such as the map and chart entitled "Pervial Auriferæ Typous Didaco Mendezio auctore." It is stated in this map that these islands were discovered in 1574.

In Alcedo's Geographical and Historical Dictionary of the Kingdom of Peru, &c., published at Madrid in 1787, the islands of Lobos are specially described as within the vice royalty of Peru. At page 599, vol. 2d, he says: "Seals Islands (Lobos) of the same coast of Peru, in the Province and District of Sana, called Windward, &c." and in vol. 4, p. 171 to 173, he mentions the Lobos Islands among the principal places of Peru.

Tho' not mentioned by name in the enumeration of the dependencies of Peru, above referred to, it is contended that this was unnecessary, because they are included in the province of Lambayeque. From time immemorial the fishermen of Lambayeque have been accustomed to visit the Lobos Islands to take fish, carrying with them their stores of food and water and bringing back fish and boat loads of eggs. In consequence of the destruction of birds and eggs, the Peruvian government has prohibited these visits.

The Peruvian government, by decree of Sept. 6; 1833, prohibited foreign vessels fishing on the shores and islands of Peru, and declared that any national vessel met with in the neighborhood of the coast and islands, without legal documents granting permission, may be detained on suspicion in any port of the Republic, without right of reclaiming for damages.

On the 28th March, 1834, the Peruvian Minister of Foreign Affairs complained to the British Charge d'Affaires, that a British schooner, the "Campeadora," had been sealing on the desert Lobos Islands. Mr. Belford Wilson, the Consul General, in a letter of 1st April, 1834, to Lord Palmerston, said that he never had a doubt of the right of Peru to issue the decree above mentioned, as "these islands and all others immediately adjacent to the coast of Peru, had invariably been considered as part of the territory of the Vice Royalty and subsequently of the Republic of Peru—indeed many of them are private property, and extremely valuable on account of the deposit of birds which covers them, and which being used for manure, employs several vessels in its conveyance to various parts of the country." He adds, that Lord Jas. Townsend, commander of the British forces in the Pacific, took a different view of the subject. He thought these islands, unless occupied by the Peruvian government or protected by the constant presence of a Peruvian vessel of war, to warn off intruders, are open to the enterprise of other nations. Mr. Wilson then desires to be informed whether the right of the Peruvian government to issue the decree before mentioned, can be questioned, and whether British vessels violating it will be entitled to protection. In reply to Mr. Wilson's letter, Sir Geo. Shee, of the Foreign Office, writes by direction of Lord Palmerston, "that from the statement contained in your despatch, (of 1st April, 1834,) there seems no reason to doubt that, as the islands are and always have been considered to be part of the territory of Peru, it would therefore appear that the Peruvian government have a right to prohibit foreign vessels from fishing on the coasts immediately adjoining to these islands, as well as upon the coasts of Peru itself, there being no evidence

in the papers which you have transmitted, of any right of fishing acquired by long and uninterrupted usage."

By a decree of 8th Dec. 1841, a monopoly of guano was established in favor of the state, in conjunction with Don F. Quiros and Don A. Alhier. This was limited to 5 years, and secured two-thirds of the nett profit to the State, and permitted the extraction of guano only to the northern Chincha Islands. The quantity allowed to be exported was 20,000 tons; but there was no limit to that wanted for domestic use.

The decree of 21st March, 1842, limited the extraction of guano to the aforesaid island and the Pabellon de Pica, and confiscated vessels taking it elsewhere. It prohibited the destruction of birds' eggs at the islands, and adopted sundry measures for the prevention of the contraband of guano.

More stringent measures were adopted by a decree of May 10, 1842.

On the 22d March, 1845, Viscount Sandon enclosed to Viscount Canning a letter from S. Prows & Co. asking whether they might lawfully take guano from the Lobos de Tierra Islands. To this he replied somewhat doubtfully, that these islands were supposed to belong to Peru, and that guano can only be taken from Peru under license from that government.

In July, 1845, Robt. Falk, a British merchant, complained to the Earl of Aberdeen that a brig belonging in part to him, which had been engaged in the pearl fishery and commerce of the Pacific coast, had gone to the neighborhood of the Lobos to recover treasure, supposed to have been in a vessel wrecked there, and had been seized by the Peruvian government, to his great loss. The British minister took measures to ascertain all the facts of this case, and finally declined (June, 1846,) making demand for damages of the Peruvian government, on the ground that the "Hibernia," having cleared from Callao for Lambayeque, had gone to the Lobos Islands in search of treasure, without permission from the custom house authorities of Peru, or the owners of the treasure, such proceeding being contrary to law.

On May 17, 1852, Mr. Addington, of the Foreign office, in a letter to Mr. Cumming Bruce, says: "I am to observe that the Lobos Islands, each and all bearing Spanish names, belonged to Peru, and accrued, like her other Spanish possessions lying within certain degrees of longitude and latitude, to the Peruvian Republic, and however advantageous it might be to G. Britain to appropriate these islands or declare them common property, it is impossible for her Majesty's government to violate international law for national interest."

Thus stands the matter. If nothing less than actual continuous possession of an island more than three marine miles from the coast, is sufficient to give exclusive dominion, Peru cannot have such jurisdiction. But if temporary possession, renewed from time to time, and enforcement of the jurisdiction claimed, by civil and naval force and repeated decrees, practically enforced by the guarda costas and other authorized employees of government, can, in the case of an uninhabitable island, give a title, Peru must be considered as owning the Lobos Islands. The controversy, at all events, if trust will result in some reasonable arrangement by which guano may be obtained at fair and moderate rates. At present it sells at a price which does not adequately remunerate the farmer, and

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which gives excessive profits to some of the parties concerned. Thirty or thirty-five dollars the long ton would afford the Peruvian government a large revenue, give profitable employment to ship owners and fair profits to the agents for its sale, while the farmer would be much encouraged to increase its application as a quick and remunerating, though not a permanent fertilizer.

It is to be remarked that, so far as we are informed, the Lobos Guano is rich in Phosphates, but by no means so abundant in ammonia as that of the Chinchas.

The above concise history of the Lobos and other Guano Islands on the Peruvian coast, has been prepared by a gentleman of the highest standing in the Councils of the Nation, from the most authentic sources, and may be relied on as correct so far as it goes. But our government, it appears from the despatches of the Secretary of State, deny the exclusive authority of Peru over the Lobos Islands. In a communication to the Peruvian Charge d'Affaires, respecting the sovereignty of Peru over these islands, based on early discovery and possession for many years, Mr. Webster fully and ably discusses the subject, and the Law of Nations bearing on it. He says that since 1793, United States citizens have been visiting these islands for the purpose of killing seals, &c., and that no objection at all was made until the year 1833, when an edict was issued by the Peruvian government prohibiting foreigners from fishing for seals and amphibious animals, on the shores and islands of Peru. The Charge of our government, upon such issue, which was sudden and unexpected, remonstrated against it, and denied the original right of the Peruvian government to said islands. To this remonstrance no answer has been returned—nor has any thing been done in the way of proving such sovereignty. "How, then," asks the Secretary, "is the subsequent conduct of Peru and her entire silence to be reconciled with the idea that she really supposed herself possessed of absolute sovereignty over these islands?"

Thus, by making no objection, Peru has silently acknowledged our right to visit these islands for the above-named purposes; and the discovery that they offer other advantages, tends not at all to invalidate that right.

All arguments arising from the proximity of these islands to the coast of Peru—based on the opinions of certain English officials, and the celebrated Geographer, Alcedo—the Secretary refutes, by the consideration that their distance from the shore is five or six times greater than the legal distance; and, he observes, "the well settled rule of modern public law on this point is, that the right of jurisdiction of any nation whose territories may border on the sea, extends to the distance of a cannon-shot, or three marine miles from the shore."

Mr. Webster concludes his despatch of 21st Aug. as follows:

"The whole discussion, therefore, must turn upon this, viz: the Lobos Islands, lying in the open ocean, so far from any continental possessions of Peru as not to belong to that country by the law of proximity or adjacent position, has the government of that country exercised such unequivocal acts of absolute sovereignty and ownership over them as to give to her a right to their exclusive possession, as against the United States and their citizens, by the law of indisputable possession? And the under-

signed repeats that this is not a question between Peru and other governments, who may have more or less distinctly admitted her right, but it is a question between Peru and the United States, who have so long exercised that right and remonstrated against its interruption.

"The Government of the United States, however, is prepared to give due consideration to all facts tending to show possession or occupancy of the Lobos Islands by Peru, and is not inclined to stop or preclude discussion until the whole matter shall be thoroughly investigated. If there are any facts or arguments which have not been brought to its consideration, they shall receive the most respectful and friendly attention. If it shall turn out that, as has been intimated above, those islands are uninhabited and uninhabitable, and therefore incapable of being legally possessed or held by any one nation, they and their contents must be considered as the common property of all. Or if, unprotected by the presence of Peruvian authorities and without actual possession, their use has been by Peru abandoned or conceded, without limitation of time, to citizens of the United States for a long period, or yielded in consequence of the remonstrance of this Government or its agents, then no exclusive ownership can be pretended as against the United States at least.

"Under all the circumstances, the President thinks it most advisable that full instructions on this subject should be dispatched to the Charge d'Affaires of the United States at Lima, and that proper orders should be given to the naval forces of the United States in that quarter to prevent a collision until further examination of the case.—No countenance will be given to the authors of such enterprises, claiming to be citizens of the United States, who may undertake to defend themselves or their vessels by force, in prosecution of any commercial enterprises to these islands. Such acts would be acts of private war, and their authors would thereby justly forfeit the protection of their own Government."

In consequence of the determination of our government to give further time for the Peruvian government to present other evidence in support of its claims, the discussion is transferred to Lima, and "orders have been given to the naval forces of the U. S. in that quarter to prevent a collision"—and Capt. M'Cauley has been directed to suspend the orders heretofore given to protect our commerce. In the meantime, what is to be the consequence to our merchantmen who have, under the pledge of the protection of our government, sailed for the Lobos Islands?

**POTATO BLIGHT.**—Since our last, we have learnt with regret that the Potato crop in Maryland, and in some parts of the adjacent States, has been very materially affected with the rot—in Baltimore and Harford counties particularly, the damage has been so great, that the farmers, in some instances, have not deemed it worth while to dig them.—The rot was produced by the heavy rains and then the hot sun which followed, in the latter part of August; the early potatoes turned out well, and the damage has been principally to the late crop.

**TO SUBSCRIBERS.**—We expect that all subscribers to the "Farmer," who have not paid their subscriptions for the present year, will attend to that important duty whilst here at the Cattle Show.

**TRIAL OF HAY PRESSES.**—We had the pleasure, on the 8th ult., to meet the Committee appointed by the State Society, to witness the trial of Hay Presses, for which a premium of \$50 had been offered. The trial took place at "Hayfields," the homestead of Jno. Merryman, Jr., Esq., near Cockeysville, Balt. Co.

The great benefit arising to the farming community from these trials, appeared to be properly appreciated by the intelligent and enterprising farmers of the surrounding neighborhood, of whom we found a large number in attendance. It was a source of some regret that there were so few presses placed in competition; yet we understand that that presented by Mr. Merryman for the contest, was deemed by the Committee as well deserving of the premium. It was a press made by Messrs. Whitman & Co., of this city, and improved by Mr. Merryman—and it was for this improvement, that the Committee awarded the premium. The report of the Committee, we are informed, will not be made until the annual meeting of the Society.

The short period allowed us after the time spent at the trial, and in discussing afterwards, the good things provided for the inner man, and under which the hospitable *matron* of "Hayfields" groaned, and around which were gathered an assembly of choice spirits, prevented us from noticing as closely as we could have wished, not only the natural beauties of this fine estate, which in point of location, is unsurpassed by any in Baltimore County; but also the appointments of the farm, which we should judge from what we did see, are of the highest order. "Hayfields," however, is not unknown to fame—it being the residence of the late Col. N. M. Bosley, who in his day was reputed one of the best farmers of Maryland—and indeed his success has the solid evidence of the appreciation of those competent to judge of the fact—for we noticed, during our visit, the testimonial of the old Maryland State Society to Col. Bosley, presented to him by the hands of the good Lafayette, the "Nation's Guest" at the time, of a massy silver Tankard, valued at \$100, bearing the following inscription, encircling a rural scene of the "Hay-makers," most beautifully designed:

"By the hand of Lafayette, from the Md. Agr. Soc.  
for the  
Best cultivated Farm, to Col. N. M. Bosley,  
Nov. 1824."

"Sic rura floreant."

This tankard, valued for the associations connected with it, is an heir loom with the estate, to descend to the third generation, and we were pleased to find that the recipient of it, in the last generation, was "on hand," tho' in the arms of the nurse—a noble boy, of whom the parents have good cause to be proud. "Hayfields," as its name imports, is principally a hay-farm, of 560 acres, and one of the largest and most productive in the county—and in the hands of its present liberal minded and intelligent owner, will no doubt descend to his successor unimpaired of that fertility which it possessed when it came into his charge. The importance of the hay-press to Mr. Merryman, may be judged of, from the fact, that he expects to pack 3000 bales this year; the weight of which averages about 175 lbs. This hay is of the best quality, and sells at the highest price in the market; that now paid, (at the present writing,) is \$21 to 22 per ton, in the bale, and \$17 to \$18 loose; the difference frequently is much greater, and

more than pays for the expence of packing and delivery in the city, where it can be stored, if at any time a ready sale cannot be effected at prices required by the producer. It is a singular fact, that the district of country, surrounding this city, is surpassed for the quality of its hay; as well as for the capacity of the land to produce it; and yet we want of a machine like that which has been introduced through the instrumentality of the State Society, not less than \$150 to \$200,000, has been annually sent to the North, to purchase an article decidedly inferior to that raised here. The trade in this product is yearly increasing; large quantities being shipped South, and the saving to the State, by the use of these presses, would amply repay for the labor and expence bestowed upon the getting up and sustaining our Society for years to come.

In concluding this hasty notice of a most agreeable visit, which, if time and space would allow, we would gladly extend, we must express our grateful acknowledgements, as well as those of all present, not only to our host, but also to the lady of "Hayfields," for our kind and courteous reception, indicated not only by that which we received in person, but also by the evident desire to please and gratify in the arrangement of all those little *conveniences* so pleasing and delightful, as well as *refreshing*, to a guest, and which must be arranged by the mistress of the mansion alone, to render them perfect and agreeable.

For the American Farmer.

#### A CERTAIN PREVENTIVE OF SMUT IN WHEAT.

Soak the grain from six to eight hours in brine strong enough to bear an egg. Drain off the brine thoroughly, and mix the wheat with the strongest quick lime, at the rate of about one pint of lime to a bushel of wheat. Spread the grain thinly, and let it dry for eight or ten hours. If sown with a drill, fan it before sowing to remove the surplus lime.

If the sowing should be delayed by wet weather, the grain may be dried and kept without affecting its germination. If sown whilst swollen, the quantity, per acre, must be increased in the whole proportion.

**Mr. Editor.**—In compliance with your request, I send the above recipe, which was obtained about ten years since from Gen. Rawson Harrison, of Rochester, New York. It has been used ever since by myself and others, with invariable success; the previous crops on the same lands, and subsequent crops on adjoining lands, where the seed was either unprepared, or prepared in a different manner, were frequently much injured by Smut.

A convenient mode of soaking the wheat, is in large tubs, made by sawing a hoghead in two.

If an empty tub be set over another, and the upper one filled with brine, by pouring the grain slowly into the upper tub, the filth will run off with the brine into the lower one.

After soaking a sufficient time, the grain may be dipped out with a manure shovel, and emptied into a basket set over an empty barrel to catch the brine. As soon as the basket is filled, it may be emptied on the floor, and the brine used again by the addition of more salt.

The mistake in the practice of "W. P. T." consisted in not brining his wheat long enough. Had he committed the same error in preparing his pot, he would as certainly have failed to save his bacon.

Yours truly,

T. TILGHMAN.

Oxford, Md., August 21, 1852.

## WORK FOR THE MONTH.

### OCTOBER.

As the month of August was unusually prolific of rain, we fear that much of the business of wheat seeding is still to be done, therefore, as this month will be one of action, we shall proceed at once to suggest such things as should claim immediate attention.

#### ON THE FARM.

**Wheat.**—Those who have not already got through with their Wheat seeding, should put forth their best energies to get it done. But if there be any who have not yet ploughed their land, we enjoin it upon them; if the fields they have allotted to this crop, be not wet lands, to plough deeply, and, by all means, to see that their ploughmen do not slightly get through with their ploughing, harrowing and rolling; for they may rest assured, that much of their success will depend upon the perfect manner in which their ground may be prepared. If the plants have a good, deep, well pulverized, dry bed to vegetate in, and the necessary food be in the soil, the more luxuriantly will they grow off, imbed their roots in it, and the better prepared will they be to resist the injurious effects of the frost, as well as those occasional thawings which occur in winter and early spring, when, owing to the sudden contraction and expansion of the soil, such sad havoc is made by the throwing out of the roots of the wheat plants.

For the manner of preparing the land, seeding the ground, and all things else connected with the growth of the crop, we respectfully refer to our remarks of last month. In that article we have embodied the honest convictions of our best judgment, after much reflection, and an honest desire to render ourselves useful to the agricultural community.

#### RYE.

If there be any who have not put in their Rye crop, to such we would say, that they should bestir themselves, and get it in as early in this month as possible; but not without treating the soil on which they may grow it to a dressing of animal manure; that if they are able to get it in within the first of the month, and the fall promises to be a mild one and to be exempt from frost, we would sow two or three pecks of buckwheat per acre, to afford protection to the Rye through the winter.

#### THRESHING GRAIN.

From what information we have been able to collect, a very large quantity of wheat has been destroyed by exposure to the rains, which set in so soon after the late harvest—a large portion also, was greatly injured by the smut, so that the crop, which, owing to the great breadth of land in wheat, would otherwise have been a full average one, is not so large by twenty-five per cent, as it otherwise would have been. Added to this, the accounts from the wheat-growing regions of Europe, state a falling off in this crop; hence, we hope that we shall have an increased demand from abroad, and would, therefore, advise all whose wheat may be in a condition for threshing, to get it out and be prepared to avail themselves of every rise in price. We do not wish them to incautiously throw their grain into the market, as gluts reduce value; but to place themselves in a position to send it forward whenever the price may justify such procedure—and we admonish them, above all things, to beware of the fabrication and tricks of speculators, as it is a part of their vo-

cation to set afloat tales for the unholy purpose of depressing prices, and thus, as it were, by the artifices of traffic, to despoil the husbandman of a portion of the fruits of his toils. Should a travelling Agent of produce purchasers present himself among you, just upon the heel of the breaking of the telegraph wires, immediately after the arrival of a steam-packet from Europe, let these circumstances arouse your suspicions, and induce you to keep a vigilant eye to your interests; for though the telegraph wires, like every thing else made by human hands, do sometimes break, they may sometimes be cut per order; for the witticisms of trade—as over-reaching is now called—are often called in to aid those who neither toil nor spin, but think it a merit to appropriate to themselves, profits which fairly and honestly belong to the tillers of the earth.

#### FATTENING OF HOGS.

The time is coming on apace, when it will be necessary to put up your hogs for fattening. In order, therefore, that you may make the most of this part of your farm economy, we propose that you should prepare for your fattening swine, a good covered shed, with a plank floor for them to sleep on, or retire to, in wet weather. This shed should be divided into two apartments—the one for feeding in, and the other for sleeping in. Attached to it there should be an enclosed yard; its size to correspond with the number of your hogs. Over the floor of this yard, spread, to the depth of 10 or 12 inches, rough materials, as marsh mud, wood, mould, or any similar substance. Over this, twice or thrice a week, sow plaster, or pulverized charcoal. Every two weeks, after your hogs are put up for fattening, clear out this yard and put in an equal quantity of rough materials—continue this practice until you have killed your hogs, and you will be able from twenty hogs, if you keep the manure out of the weather, or so pack it up in bulk as to turn the water, as will manure you as many acres of land. This is not an exaggerated statement, and will not be so considered by those who reflect that there are nearly 5 lbs. of Urea in every 100 pints of hog urine, and that there are nearly 3 lbs. in his solid excretions; that every pound of Urea is resolvable into so much ammonia, and that this mixed manure, yields in every 100 lbs., 12 lbs. of Potash, 7 lbs. of the Sulphate of Soda, 19 lbs. of the Phosphate of Soda, and of lime and magnesia 8 lbs. 8oz. We say, that those who reflect, that the excretions of the fattening hog are thus rich in the elemental food of plants, will not consider what we say in behalf of the value of the voidings of the hog, as manure, to be in the least exaggerated.

While the hogs are undergoing the process of fattening, corn should be scattered daily over the yard, to induce them to root for it; for, in so doing, they will turn over and mix the excretions with the rough material, and thus aid in the absorption of the former by the latter.

The material from the hog-yard, whenever cleaned out, should be thrown into bulk, in such form as will turn water, and then be compressed with the back of the shovel, and have fresh portions of plaster, or powdered charcoal, added to it, and dusted over the surface of the heap.

#### TREATMENT OF THE HOGS.

When first penned to fatten, they should, for three or four days, at intervals of a day apart, have mixed with their food, which should be soft, in the pro-



portion of a teaspoonful of sulphur, and half a teaspoonful of copperas for each hog.

Their food for the first week or ten days, should be mainly pumpkins, roots, apples or vegetables of some kind, mixed with a small portion of corn meal, which should be cooked. As the feeding progresses, increase the quantity of meal. The last three weeks of the fattening, the hogs should be fed on cooked corn meal.

Their beds should be provided with straw or leaves, which should be cleaned out and renewed once a week.

#### REQUISITES FOR THE HOG YARD.

Each yard wherein hogs are fattened, should be provided with a Rubbing-post for the hogs to rub themselves against, and a trough in which should be constantly kept, charcoal, rotten-wood, ashes and salt.

#### TIMES OF FEEDING.

The hogs should be fed thrice a day, morning, noon, and evening, at regular hours—regularity, being promotive of success in feeding.

#### TIME OF PUTTING UP.

When the mast of the woods are eaten up. So long as the nuts of the oak, the beech, and the chestnut, are plentiful in the woods, so long may the hogs remain abroad; for they relish and fatten upon this kind of food; but when this description of food becomes scarce, they should be penned up, as after they begin to fatten, they should never be permitted to fall off. From that moment, *encured* should be the word until they are slaughtered.

#### WASHING OF THE TROUGHS.

It is a good custom to wash the troughs of the hogs out daily.

#### CATTLE YARDS.

See that your cattle yards are covered fully 12 inches deep with rough materials of some kind, to absorb the urine of your stock, and be sure to strew plaster or powdered charcoal over them twice or thrice a week. Before putting the material in, make your yard slightly dish shape, to prevent the liquid from running off. If, during the winter, the weather permit, add more rough materials to those already covering your yards.

#### CATTLE-SHEDS.

If you are not already provided with those necessary appendages of every farmer's home, do not let another season pass without providing them, the expense will be more than covered by the provender saved.

#### MATERIALS FOR MANURE.

Let us again urge you to collect and compost every thing on your farm that is susceptible of being converted into manure; and there is nothing that ever formed part of a living body that is not—add to these materials, as you throw them into heaps, a few bushels of ashes per load, and a bushel of plaster for every twenty loads. Or if you have not the ashes, add one load of barn-yard or stable manure to every two loads of the rough material—and it matters not whether the latter be peat, marsh mud, creek mud, river mud, woods-mould and leaves, pine-shutters and mould—by the time next spring that you are prepared to haul it out to your corn ground, it will all be good manure—all sufficiently fertilizing to feed and vastly increase your corn crop.

In the Spring previous to hauling it out, shovel it over, so as to mix the mass thoroughly and equalize

its fertilizing properties. If when you are subjecting your manure pile to this process, you were to add two bushels of salt to every twenty loads, you would add greatly to its value.

#### PUMPKINS AND ROOTS.

Now that you have undergone the trouble and expense of growing these, pull, dig, and put them away in some cool place, before the frost injures them, in order that you may derive the benefit of your labors.

#### ORCHARDS.

Examine the trees of your orchard with care—wherever you find a *dead limb*, cut it off with a saw down into the sound wood, smooth the surface with a drawing knife, and coat it over with a composition made of gum shellac dissolved in alcohol, about the thickness of paint. We are not the advocates of pruning at this season—or of much pruning at any time—but *dead limbs* ought to be cut off whenever found, no matter what time it may be, for so long as they remain, the more injury will they do; as corruption, by contact, will beget corruption.

If the bodies of your trees are rough, rosy, or mossy, scrape them, and give them a coating composed of 1 gallon soft soap, 1 lb flour of sulphur, and 1 qt. salt, thoroughly mixed together. And if your orchard has not been recently manured, and you are not prepared to manure the whole of it, dig in a bushel of compost made thus, around each tree—the spading to be done only about 2 inches in depth, to avoid injuring the roots of the trees. For every double horse cart load of marsh, or river mud, or wood's-mould, add an equal quantity of horse dung, 2 bushels of bones, 5 bushels of ashes, 1 bushel of salt, and 1 bushel of plaster, layer and layer about, let it lay in bulk three or four weeks, then spread around each tree 1 bushel of the compost, and spade it in.

While upon the subject of manuring apple trees, we will add an extract from J. J. Thomas' *American Fruit Culturist*, upon

#### RENOVATING AND PRUNING OLD ORCHARDS.

"As soon as the first symptom of failure in old orchards appears, they should, in addition to good cultivation, be freely manured in connection with the application of lime or leached ashes." "The change which may be thus wrought, can hardly be understood by one who has not witnessed the result. The following experiment, similar in nature, but differing in the mode of performance, described by H. W. Rockwell of Utica, New York, cannot fail to be interesting."

"The experiment was performed upon three trees standing on my ground, none of which were less than thirty years old. One of these trees, an old fashioned Newtown Pippin, and a great favorite, had borne moderately; the other two made out between them, to 'get up' about a dozen apples a year, just to let me know, I presume, that they 'could do it,' but were perfectly indifferent how it was done. I last summer, undertook the renovation of these trees. For this purpose, I opened between them trenches, say ten feet in length, two feet in depth, and about eight feet equi-distant from tree to tree. The roots which were once united in their operation, were, of course, all cut off, the trenches filled with well rotted manure, and closed. I finished by giving each of the trees about a peck of charcoal mixed with the same quantity of ashes, and now for the result. I have this year gathered from the 'two outcasts' just mentioned, instead of my annual ditto

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dend of a dozen apples, from 6 to 8 bushels a piece of as handsome fruit as you ever saw, with about the same proportion from the third, which has always been a moderate bearer."

#### DRAINING.

All wet lands should be drained—unless relieved of their surplus water, they will never grow more than half crops, and those of inferior quality. Draining makes a cold soil comparatively warm—it makes a stiff one friable—it contributes to the health of the farm—it enables the farmer to plough deeper with greater ease—it hastens the maturity of his crops fully two weeks, and renders the manure applied more effective.

#### MILCH COWS AND OTHER STOCK.

See that these do not suffer. Provide them food to make up for the deficiencies of the pastures, as it is important you should bring them into winter quarters in good heart.

#### WORKING ANIMALS.

Have a care to these—feed them well, let them be housed of nights, and kept clean and comfortable.

#### BUCKWHEAT.

Harvest and secure your buckwheat before the frost cuts it down.

#### FALL PLOUGHING.

Any stiff clays that you may intend for culture next spring, should be ploughed this fall, and if they need liming, apply lime or marl.

#### SHADE TREES.

As no country dwelling appears to advantage without shade trees, if you have none around and about yours, set some out this fall. As to kinds, we would say there are none more beautiful than you can find in your own woods. And while you are adorning your house with trees, do not omit to arrange various kinds of shrubbery at suitable points, to give effect to the scene and relieve the eye.

#### SETTING OUT NEW ORCHARDS.

If you have no apple orchard on your farm, it is a duty which you owe yourself, your family, and your neighbors, by way of example, that you should supply that deficiency. In selecting your fruit trees, consult your location, and procure trees from nurseries in your own latitude, if good sorts are to be there obtained, and especially should you look to this in the selection of your winter fruit. Apples which are celebrated in the North as excellent winter fruit, when grown in the South often turn out fall apples; this difference in maturing being effected by a few degrees of latitude. The ground to be selected should be fertile—should be such as will bring a large crop of corn, and, before being planted in apple trees, should receive, per acre, a compost comprised, as follows:—10 double horse cart loads of marsh mud, river mud, peat or woods-mould and leaves, 10 double horse cart loads of stable or barn-yard manure, 5 bushels of bone-dust, 10 bushels of ashes, 2 bushels of salt, and 1 bushel of plaster, to be formed into heap, layer and layer about, and permitted to remain in bulk one month, then to be shoveled over, evenly distributed over the land, and ploughed in.

Land to be set in an orchard should receive at least two ploughings, one very deep, the other not so deep, the manure to be applied at the second ploughing. Indeed, it would be better that, at the time of the first ploughing, if the land were subsoiled also.

Don't sell your corn on the cobs; but save the cobs, to be ground into cob-meal to feed out to your cattle mixed with cut straw or hay.

**MARL.**—We have received from Jno. G. Wilson, esq. a box of shell marl, inexhaustible quantities of which are found on his farm on the banks of the Meherrin river, near Murfreesboro, N. C. and easy of obtainment.—It appears to be very rich, and will, we have no doubt, be found of immense value to the farmers of the state, who are within a moderate distance of it. Such deposits are more certain of dispensing wealth to the enterprising, than the gold diggings of California or Australia.

#### SMUT IN WHEAT—PLOUGHING IN GUANO.

LAUDERDALE, Carroll Co., Md., Sept. 2d, '52.

To the Editor of the American Farmer—

Seeing a call in your August No. for information on the subject of a remedy for the Smut in Wheat, I thought of giving a simple process by which I have been relieved, but pressing circumstances prevented my attending to it until it became too late for the Sept. No. It may, however, benefit some who do not sow till in October.

I will first give an extract from a note, page 34, vol. 2d, Dickson's Agriculture, to show that thorough washing will relieve the grain from the infectious matter. "Mr. Somerville, in the 2d vol., communications to the Board of Agriculture," gives the following statement:—"Some years ago, he collected a quantity of smutted ears from one field of wheat, in which they were very numerous, and a number of healthy well filled ears from another field in which there was no Smut. The grains were rubbed out of both, intimately mixed, and kept in a box for two months, at the end of which, they were rubbed between the hands in such a manner as to break the whole of the smut balls. The parcel was then divided into two equal parts, one of which was three or four times washed with pure water, and well rubbed between the hands at each washing, and afterwards sown in a drill in his garden; the other half was sown in another drill without washing, or any preparation whatever—the soil and every other circumstance was equal. Both parcels vegetated at the same time, and for about two months thereafter, there was no visible difference in their appearance; about that period he, however, observed that many of the plants in the drill that had been sown without being washed, were of a darker color than the others—a dirty green. The plants in the drill that had been washed, were all of one color, and seemingly healthy; as the season advanced, the difference in color became more striking, and continued to increase until the grain was fairly out of the blade, about which time, many of the dirty ears began to exhibit symptoms of decay. As soon as the ear was fairly shot out, the whole of those in the unwashed drill, that had the dirty green appearance, were found to contain nothing but smut; and these smutted ears were in the proportion of more than six to one of the healthy ones, while, on the contrary, the drill in which the washed grains had been sown, and which consisted of several hundred grains, had hardly a smutted or unhealthy ear in it. The same experiment was repeated the following season with nearly the same result."

The above extract shows that however the disease may originate, it will be propagated by contact, and that there is a simple remedy or preventive in thorough washing. As thorough washing would require much labor, I used a strong solution of salt and water, merely to float the diseased and imperfect grains, and then dried it off with recently slaked lime.

Some years ago, I received from a friend, six bushels of a new variety of wheat, in which there seemed to be all sorts of filth, and among the rest, smut enough to impregnate the whole. I first screened it to take out the cockle and cheat, and then made a strong brine to float the smut grains; after which, not having any lime, I dried it off with unleached ashes, thinking that the brine had effected the cure—but in this I was mistaken, for the following harvest showed, that though the disease was reduced, it still existed. The following fall, I substituted *recently slaked lime* instead of ashes, by which the disease was entirely removed, and not a smut head found in the field the ensuing harvest. So perfectly satisfied am I, that lime is a perfect remedy, that if it were not for floating off the smut balls, I would use simple water to wet the grains, so that the lime might adhere.

Since writing the above, I received the No. of the Farmer for the present month, and find a great many modes presented to prevent the propagation of smut, which may render my communication of no account farther than the simplicity of the method.

I see from the present No., that your much esteemed correspondent, Mr. Calvert, is out against ploughing in Guano. I have no disposition to enter into the controversy further than to state one or two facts in the premises.

My impressions from theory and observation, have, I must say, been in favor of ploughing under all manures from which nutritive gases are evolved, and of course I felt it particularly applicable to Guano. I, however, last summer, was prevented carrying out my own views, by circumstances which I could not well control. It was an oats stubble of some 16 acres. This field had a dressing of about 125 lbs. to the acre, ploughed in previous to sowing with oats, with the exception of a small border ploughed in the fall. This border had the Guano sowed on and harrowed in with the oats, and looked, for a while, superior to the other, but was soon overtaken and left behind. In ploughing the stubble, I left a headland unploughed, on which I sowed the Guano and ploughed in. On that already ploughed, I sowed the Guano combined with plaster, and dragged it in with a heavy three horse cultivator. The result was, the ploughed in soon showed its superiority and maintained it throughout. With that ploughed in I put no plaster, for the simple reason that the chemical combination formed by the union of Sulphuric Acid and Ammonia, forming a soluble salt which might be washed into the sub-soil and rendered unavailable.\* Another case was a field of one of my own sons, part of which the Guano was ploughed in, and part harrowed in. The difference was obviously in favor of that which was ploughed in.

Very respectfully,

DANIEL ZOLLIKOFFER.

Note by the Editor of the American Farmer.

\* The reason assigned by our respected correspondent for the non-use of plaster in connection with guano, is not satisfactory to our mind. It is true, as he alleges, that *Sulphate of ammonia* is a soluble salt—for two volumes of water will dissolve one of sulphate of ammonia; but he should recollect, that carbonate of ammonia is soluble and volatile also; that water at the common temperature takes up 780 times its volume of ammonia, so that this sinking of the ammonia into the subsoil, is more likely to result from the carbonate than from the Sulphate of ammonia, independent of the loss from evaporation.

Liebig remarks:

"The carbonate of ammonia formed by the putrefaction of urine, can be fixed or deprived of its volatility in many ways."

"If a field be strowed with gypsum, and then with putrified urine or drainings of dunghills, all the carbonate of ammonia will be converted into the sulphate which will remain in the soil."

And the same effect will be produced by the admixture of plaster and guano together. Whenever the nitrogenous compounds which are present in the latter, by the processes of fermentation and putrefaction, are converted into the carbonate of ammonia, consequent upon the presence in the soil of water, heat and atmospheric air, and the sulphuric acid of the plaster is liberated, a union takes place between the sulphuric acid and the ammonia, and the sulphate is formed.

Again, Liebig observes:

"The carbonate of ammonia contained in raw water is decomposed by gypsum, in precisely the same manner as in the manufacture of Sal-ammonia. Soluble sulphate of ammonia and carbonate of lime are formed; and this salt of ammonia possessing no volatility, is consequently retained in the soil. All the gypsum gradually disappears, but its action upon the carbonate of ammonia continues as long as a trace of it exists."

## GUANO—GUANO—GUANO.

J. J. & F. Turner, 36 Pratt st., Balto.

Dealers in Guano, Bone-Dust, Flour, Grain, Feed, and Seeds,

HAVE on hand, of late importations, a large supply of No. 1 Peruvian, and Nos. 2 and 3 Patagonian and Mexican GUANO; fine and coarse BONE-DUST; Family, Extra and Super FLOUR, warranted to give satisfaction; GRAIN of all descriptions; MIXED SEED of every grade; Clover, Timothy, Millet, Orchard and Herd Grass—all of which they offer for sale on pleasing terms, at the lowest prices.

They particularly call the attention of Farmers to their quality Patagonian Guano, containing 17½ per cent. of Salts of Ammonia and 37 per cent. of Phosphates, and 2d quality, containing 18½ per cent. of Salts of Ammonia and 25½ per cent. of Phosphates. The accounts we have received of this Guano warrant us in recommending it as the cheapest article in the market.

Dr. Stewart's analysis and remarks on the above Guano, can be seen at our store. Aug. 1

## Bone Dust and Poudrette.

BY the request of my customers, I have made considerable improvement in the machinery for GRINDING BONE, and am now prepared to furnish a fine article, which acts quicker and more powerfully, as I extract no glue from the Bone, or use any Chemicals, leaving the Bone Dust in its natural or pure state, weighing from 55 to 60 lbs. per bushel. The Poudrette is as good as can be made, and will be sold low. Apply by letter, or at the Factory on Harris' Creek, Baltimore, Maryland. THOS. HAYNES.

## REFERENCE.

D. M. Perine, Lloyd Norris, Wm. Baker Dorsey,  
G. W. Lurman, W. B. Stephenson, W. H. Ross,  
J. Q. Hughtett, J. W. Randolph, Capt. C. Wright,  
J. Tyson, Jr., T. Jeff. Rusk, Wm. S. Bond.  
N. B. Orders left with the Office of the Farmer will be attended to.

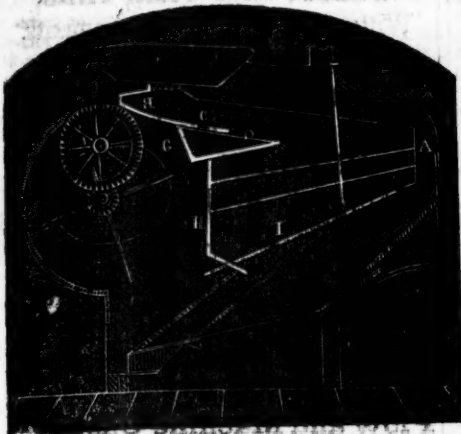
On 1st December and January, I will sell my Bone Dust at 50 cts. per bushel. Oct. 1

## LIME—LIME

THE undersigned having purchased of E. J. Cooper the most extensive Lime Burning Establishment in the State, is now prepared to supply Agricultural and Building LIME, of superior quality, to farmers and others, on accommodating terms, from his Yard, at the City Block, or delivered at the several landings on the Chesapeake Bay and its tributaries, and pledges himself by strict attention and punctuality, and a determination to do justice, to merit a liberal share of patronage. Any orders addressed to him through the Baltimore Post Office, or left with C. W. BURGESS & Co., No. 60 South street, one door above Pratt, will be promptly attended to. Feb. 1-ly

JAMES L. SUTTON.

**J. MONTGOMERY & BRO.,** Inventors and Manufacturers of their celebrated Double Screen



## ROCKAWAY GRAIN FANS.

Having manufactured about 4,500 Fans during the last 12 years, and having made some very important improvements during the last two years, are now prepared to furnish FANS, wholesale and retail, to any part of the United States, with the latest improvements, and of the best material and workmanship.

Their Shop is at 155 North High Street, Baltimore, at Woodcock's Plough Establishment, where all orders will be attended to promptly, and their Fans warranted to give full satisfaction on trial. Price, \$30, for No. 1. This is the largest size, and none others made unless specially ordered.

The subscribers have no fears in assuring the farmers that this Fan cannot be surpassed in efficiency and durability, by any other sold in this State, and they only ask a fair examination and comparison.

It will be exhibited at the State Agricultural Society's Show, to take place this month, and is also new on exhibition at the Mechanic's Institute Fair, held in this city. Oct 1-11

**C. H. DRURY,** Hollingsworth street corner of Pratt—Head of the Basin—having completed his establishment with Foundry connected, for the making of his own Castings, is prepared to furnish all varieties of **AGRICULTURAL IMPLEMENTS and CASTINGS**, made to pattern of the best material.

The following is a list of **PLOWS** kept constantly on hand: Davis, of the different numbers, for wrought and cast shears, S. & M., Chenoweth, Wiley, 2 and 3 furrow, No. 0, Hill side, No. 1 and 3 Connecticut—Beach Improved or Posey Plow, with common Davis cast shear—Self-sharpener or wrought shear—Corn Cultivators, plain and expanding—Tobacco do. Wheat Fans—Corn shellers with double hopper—Old Vertical and Virginia sheller—Harrows—superior Pennsylvania made Grain Griddles—Revolving Horse Rakes—Cylindrical straw Cutters, &c. &c. Horse Power **GRIST MILLS**, a very useful and saving article, and coming into general use. **HORSE POWER AND THRESHING MACHINES**, of these I need not say anything, as wherever they have been in use any time, they are preferred to all others.

C. H. D. will this year make a smaller size Power & Thresher, (price of Power, \$100, Thresher, \$50, Band, \$10, or when taken together, complete, \$150 cash.) Persons in want of implements made of the best material, and put together in the strongest and best manner to answer the purpose for which they are intended, are invited to call on the subscriber. Jel

## GUANO! GUANO!!

THE subscribers have now in warehouse, and will be receiving by different vessels during the season, their full supplies of Peruvian Guano, and are prepared to furnish the article in lots to suit, at the lowest market rates.

They guarantee the purity of all guano passing through their hands, and farmers ordering, may depend on every attention being given to its proper shipment.

In store, their cargo of very superior **PATAGONIAN GUANO**, imported in Harque Henry Kelsey. The cargoes of second quality imported in the "New Regular" and "Christiana Murry."

Clover and Timothy Seed; Rock Salt for stock; Ketticwell's Fertilizer; Ground Bones, Ground Plaster, Fish, Bacon, &c.

**W. WHITELOCK & CO.,**  
Corner Gay and High sts.

July 1-4.

## Mexican Guano.

**GUANO**—700 tons Mexican Guano, in store and for sale by **STIRLING & AHERNS**, 54 Buchanan's wharf, at \$25 per ton of 2240 lbs.

We have the following certificate from Dr. David Stewart, who analyzed the Guano. "It contains the largest proportion of Phosphates I have ever met with—where they are deficient in a soil, this Guano is cheaper and much more permanent than the Peruvian. Signed,  
June 1-4. **DAVID STEWART."**

**POUDRETTE, &c.—POUDRETTE,** from the Lodi Factory, at \$1.75 per bbl.

**IVORY or BONE BLACK** at \$1.50 per bbl.

**REFRIGERIOUS FINE COAL**, at \$1.25 and \$1.75 per bbl.

For sale by **WILLIAM CHILDS,**  
sept 1-21. No. 75 South street, Bowly's wharf.



**AGENCY FOR THE PURCHASE AND SALE OF IMPROVED BREEDS OF ANIMALS.**—Stock Cattle of the different breeds, Sheep, Swine, Poultry, &c. purchased to order and carefully shipped to any part of the United States—for which a reasonable commission will be charged. The following are now on the list and for sale viz:

Thorough bred Short Horns and Grade Cattle

Do	do	Alderney	do	do
Do	do	Ayrshire	do	do
Do	do	Devons	do	do
Do	do	South Down Sheep	do	do
Do	do	Oxfordshire	do	do
Do	do	Leicester	do	do

Swine and Poultry of different breeds.

All letters, post paid, will be promptly attended to. Address

**AARON CLEMENT,**  
mh 1 Cedar st, above 9th st., Philadelphia.



## TO FARMERS.

THE undersigned, by this method, would appreciate the Agricultural community, that he is still engaged in the manufacture of the renowned **Wiley, Empire**, and other choice Plows. He also manufactures and has for sale, a number of the best and most efficient Farming Implements in use. Call before purchasing elsewhere, as his terms are such as cannot fail to please. All implements guaranteed.

Agents for the **Wiley, Empire**, Boston, Woodstock, and other Plow Castings. **A. G. MOTT.**

At the old stand, No. 38 Ensor, street, and at No. 51 N. Paca street, opposite the Hand Tavern, Balt. mh-1.

## PERUVIAN GUANO.

THE subscribers have now in store, and will receive during the season, direct from the *Chincha Islands*, a full supply of No. 1 **PERUVIAN GUANO**, which they offer to agriculturists generally at the lowest market rates. They guarantee the purity of all guano passing through their hands. Purchasers receiving their supplies from the vessel will save the cost of storage. **POWELL & CO.,**  
Washington, D. C.

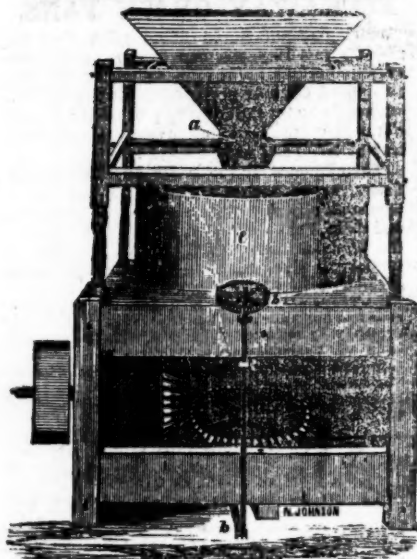
aug 1-31

## Important to Purchasers of LUMBER.

THE undersigned is selling **SHINGLES, LATHS, PICKETS, CULLINGS, WEATHERBOARDING, &c.** at the lowest cash prices, if taken from the wharf, lower end of McElmerry's wharf, opposite the State Tobacco Warehouse. **ROBERT HOOPER.**  
June 1-1y

## NEW PLASTER MILL.

THE subscriber offers for sale, fine **GROUND PLASTER**, of best quality, and on the lowest terms. He has also a Bone Mill attached, and intends to keep a large supply of **GROUND BONES**, pure from the mill. His machinery is all on the best, and some of it on improved principles. He feels confident that entire satisfaction will be given to all who may oblige him with their orders. **J. BARKER,**  
sept 1-21 No. 75 Monument st. near York avenue.

**30 inch Domestic Grist Mill.**

**SINCLAIR & CO'S  
AGRICULTURAL  
IMPLEMMENT WORKS**

AND

**SEED STORE,**

Nos. 58, 60 and 62 Light street,  
BALTIMORE,

Manufacturers of HORSE POW-  
ERS and THRASHING MA-  
CHINES, DOMESTIC GRIST  
MILLS, and Negro Hominy do.

**Rice Thrashing Machines,**  
NEW AND VALUABLE.

**CORN AND COB CRUSHERS,**

Several sorts, for Farm and Mill use.

**CORN SHELLERS,**

Eight sorts, for hand and horse  
power.

**Straw and Fodder Cutters,**

Including the famous Cylindrical  
Green's patent, and several kinds  
common cheap sorts.

**WHEAT AND CORN FANS,**

With the latest improvements.

**APPLE MILL AND PRESS,**

A combined machine, very com-  
pact and excellent.

**HUSSEY'S PATENT****REAPING & MOWING MACHINE.****PLOWS, HARROWS,  
AND CULTIVATORS.**

Of these we make an endless va-  
riety, and patterns best suited for  
the South; also,

**Plow and Machine Castings,**

Of best quality, including Shares  
of composition metal and chilled  
points.

**FARMING & GARDEN TOOLS,**

A large and general assortment.

**GARDEN AND FIELD SEEDS.**

FRUIT AND ORNAMENTAL

**TREES AND PLANTS.**

For particulars, prices, &c.  
we refer to our illustrated and de-  
scriptive Catalogue, supplied gratis  
on receipt of a six cent stamp.

Orders received will have prompt  
attention; and if selections are left  
to us, they will be properly supplied,  
and planters insured against pos-  
sessing implements of light, com-  
plicated and inferior construction,  
and, as regards the South, of doubt-  
ful utility.

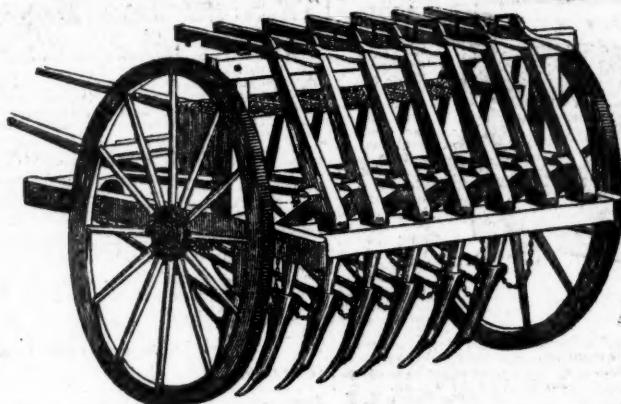
**R. SINCLAIR, JR. & Co.**

oct 1 Manufacturers and Seedsmen.

**AGRICULTURAL IMPLEMENTS.—LABOR SAVING  
MACHINERY.**—GEORGE PAGE, & CO. Machinists  
and Manufacturers, Baltimore st. West of Schröder st. Bal-  
more, are now prepared to supply Agriculturists and all others  
in want of Agricultural and Labor-saving MACHINERY, with  
any thing in their line. They can furnish Portable Saw Mills to go by steam, horse or water power; Lumber Wheels; Horse  
Powers of various sizes, ranging in price from \$85 to \$190, and  
each simple, strong and powerful. Their Horse Power and  
Thrashing Machine, they are prepared to supply at the low  
price of \$135 complete; the Thrashing Machines without the  
horse power, according to size, at \$30, 40, 65 and \$75; Im-  
proved Seed and Corn Planter; Portable Tobacco Press; Pa-  
table Grist Mills complete, \$165.



## Pennock's, Peirson's, Moore's and Hunt's



## IMPROVED WHEAT DRILLS.

**E. WHITMAN & Co.** have now on hand a most complete assortment of WHEAT DRILLS, all of the most approved kinds, having been thoroughly tested in the last few years, and are now recommended to the Farmers of Maryland and the adjoining States as being very superior. Price from \$50 to \$100.

Farmers wishing to procure the best article will do well to call and examine our stock.  
oct. 1 **E. WHITMAN & Co., cor. Light and Pratt sts., Balt. Md.**

## 100 WHITMAN & CO.'S PREMIUM HAY PRESSES.

**E. WHITMAN & Co.** have manufactured and sold every HAY PRESS that has ever received a Premium of any kind in the United States.

The Pennsylvania State Agricultural Society awarded them a Premium of \$20 in Oct. 1851, and \$40 was awarded in 1850 and 1851, by the Maryland State Agricultural Society, and again at the trial in Sept. 1852—\$50 was awarded to John Merryman, Jr. Esq. for one of **WHITMAN & CO.'S MANUFACTURE OF HAY PRESSES.**

We are now manufacturing a large number of the above HAY PRESSES, many improvements added, which have been suggested by experience, and we can now recommend our Presses as being superior to all others.

With our experience and the facilities we now have at our new works at Canton, we are prepared to furnish a better Press and at less price than any other manufacturer in the country.

Prices of our improved Premium Presses are according to size and quality, from \$75 to \$150. Farmers and others in want of a good Press at low price will please give us a call.

We are also manufacturing, on a large scale, MACHINERY and IMPLEMENTS for Farm purposes of every description, and can fill orders with dispatch and on the most favorable terms.

oct. 1

**E. WHITMAN & CO**

## **E. WHITMAN & Co.'s** **PREMIUM WROUGHT IRON RAILWAY HORSE POWER.**

Which has received all the premiums that have ever been awarded to Railway Powers of any description by the Md. State Agricultural Society, viz:

1849—First Premium of the Maryland Agricultural Society, to **E. WHITMAN**, for his Wrought Iron Railway Horse Power, \$10

1850—First Premium of the Maryland Agri-

cultural Society, to **E. WHITMAN**, for his Improved Wrought Iron Railway Horse Power, \$15

1851—To **E. WHITMAN & Co.**, by the Maryland Agricultural Society, for their Improved Wrought Iron Railway Horse Power, a Certificate of Pre-eminence, over all others.

Price, \$100.

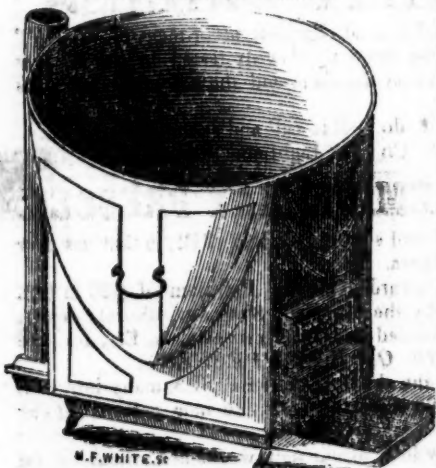
## Farmer's and Planters' Boiler or Laundry Kettle.



A NEW article, designed for the use of Farmers, Planters or Manufacturers, or for any purpose where the common cauldron has heretofore been used. It consists of a stove or fire box, designed for burning long wood, brush or chips to which a cauldron is so adapted that the flame is spread in a thin sheet around the bottom and sides, forcing it equally over every portion of the fire surface at the same time, thus greatly economizing in the use of fuel, and ensuring the utmost expedition in its operation. For sale by  
july 1, 6t

BARTLETT BENT, JR.  
239 Water Street, N. Y.

## Macgregor's Agricultural Boilers, For Farmers and Planters.



M. F. WHITE, JR.

A NEW and improved article of Cauldron, far superior to, and decidedly the most economical boiler in use; equally adapted to wood or coal. It consists of a stove with an outer case extending to the entire top of the boiler, thereby allowing the heat to pass all around before it can escape. To Tobacco planters they are invaluable—after having used them for boiling food for stock, scalding hogs, &c. they can be removed to the tobacco house, and by reversing the boiler and putting it on top of the case, it forms a complete hot air furnace, and will heat the largest house sufficiently for drying purposes, the inventor having an especial eye to that object; we have them of the following sizes, viz: 15, 30, 60, 90, 120 and 150 gallons. Please call and examine before purchasing.

For sale by ROBBINS & BIBB,  
Sole Agents for the State of Maryland,  
39 Light street, Baltimore.

P. S.—We have also a full and complete assortment of Stoves, Cooking Ranges, Hollow Ware, Copper and Tin Ware, &c.  
july 1, 6t

## LIME.

THE subscribers are prepared to furnish Building and Agricultural Lime at the depot on the Back Basin, corner of Eden and Lancaster-sts., which they will warrant to give satisfaction, it being burnt from pure Alum Lime Stone, equal to any found in the United States. Orders may be left with WILLIAM ROBINSON, No. 15 Hollingsworth-street, near Pratt.

if FELL & ROBINSON, City Block

## PERUVIAN GUANO.

THE undersigned, exclusive Agents of the Peruvian Government, for the importation and sale of Guano into the United States, have the honor of notifying to the farmers and dealers of this country, that they have settled in this city a branch of their Lima house (Peru) under the especial direction of their partner, Mr. Frederick Barreda, with the object of performing all the business relating to that Agency in the United States.

Following the views of the Peruvian Government, whose wishes are to establish a fixed and convenient price for this manure, offering the same facilities to farmers and dealers of obtaining it from first hands, the undersigned have decided to sell the Guano at the rate of \$46 per ton of 2,240 lbs., put into good bags for all quantities above 50 tons, with due notice to purchasers, that all duties, charges or fees, now imposed, or that may hereafter be imposed upon the introduction of Guano by the laws of the different States into which it may be imported, will be paid by them, in addition to the above named price of \$46 per ton.

Full cargoes of Guano can be purchased and delivered at any safe port of entry in the Chesapeake or Delaware Bays, or other tributaries.

The consignees only warrant as proceeding from Peru the bags of Guano marked with their true mark, and sold by them or their Agents.

For further particulars apply to

F. BARREDA & BROTHER,  
No. 62 S. Gay st., Baltimore, or to  
T. W. RILEY, 42 South street,  
Our Agent in New York.

july 1-17r.

## Important to consumers of Peruvian Guano.

THE Government Agents for the sale of Peruvian Guano in the United States, having appointed the undersigned Sub-Agent for sales in the District of Columbia, he is now prepared to furnish No. 1 Peruvian Guano in lots of one to one thousand tons, upon terms which cannot fail to give satisfaction. A depot will be established in Georgetown in connection with his house in Washington, and farmers will thus be enabled to obtain supplies of the article in its purity, from DIRECT IMPORTATIONS to the Potomac.

His neighbors of Maryland and Virginia will find it to their convenience and interest to purchase of him—and he hopes to strict personal attention to their orders, to receive from them a generous share of patronage.

FTZHUUGH COYLE,  
National Agricultural and Seed Warehouse,  
Washington City.

july 1-4t

## New Produce, Grocery & Commission Store.

THE subscribers offer their services to the farmers of Maryland and adjacent States, for the sale of PRODUCE of all kinds. The advantages of having an agency in this city, to dispose of MARKETING, are now well understood, and they enter themselves, from their knowledge of the business, that they will be enabled to secure better prices than are now generally obtained. They will also attend to the sale of Tobacco, Guano and Country Produce generally, charging a fair commission for their services—and will purchase Guano, Lime, Bone Dust, Plaster, Seed, &c. to order. Prompt settlements will be made, and no effort will be spared to give satisfaction.

COLEMAN & RICHARDSON,  
35 Light st. wharf, Baltimore.

july 1-5t

## Notice to Farmers—GUANO.

THE undersigned would respectfully call the attention of Farmers to their extensive stock of GUANO, and would solicit an examination of the same before purchasing. We have, as usual, a large supply of No. 1 quality PERUVIAN, of direct importation, the analysis of which cannot be excelled by any in this market. Also, PATAGONIAN of 1st and 2d qualities, the former containing 44 per cent. of Phosphates and 13 1/2 per cent. of Salts of Ammonia; the latter 25 1/2 per cent. of Phosphates and 10 per cent. of Salts of Ammonia, as per certificate of Dr. David Stewart, which can be seen at our warehouse.

These Guanos, containing, as they do, a very large proportion of Phosphates, and enough of the active property, Ammonia, are peculiarly adapted to stiff soils, and we are in possession of various testimonials from Farmers, stating that the results derived from their use have been more satisfactory, at about half the cost, than that obtained from Peruvian.

We are now enabled to sell GUANO at prices greatly reduced from those of previous seasons.

A liberal deduction made to clubs or parties taking 50 tons.

All Guano is sold by us under a guarantee of its genuineness.

GUANO, Grain and Flour Warehouse,  
Corner of Bowly's wharf and Wood street, Baltimore, Md.

aug. 1-3t

## GUANO—GUANO.

500 TONS PERUVIAN GUANO, direct importation, and warranted equal in quality to any in the market. The Guano is put up in good strong bags, and is fine shipping order. For sale in lots to suit purchasers, at the lowest market rates, by

WM. ROBINSON, No. 4 Hollingsworth st.  
near Pratt st. wharf, Baltimore, Md.

Also, PATAGONIAN GUANO, BONE DUST, Building and Agricultural LIME, for sale on the best terms. Je. 1-17

**F. B. DIDIER & BRO.,**

No. 97 North Paca, near Franklin Street,

PROPRIETORS OF THE

**MD. AGRICULTURAL IMPLEMENT DEPOT  
AND COUNTRY PRODUCE RECEPACLE.**

WE would be brief in our card, by merely saying that we are well supplied with everything appertaining to our line of business; and we are determined to give our sole and undivided attention to the wants and wishes of our friends, and moreover to make our various business transactions satisfactory to all.

**DRILLS! DRILLS! DRILLS!!!**

We are Agents for the sale of MOORE'S CELEBRATED WHEAT SEEDS, combining as it does, many and important improvements. The Timothy Seeder, or Guano Sower is annexed to some, while others remain plain. We consider it unnecessary to say a word in praise of this master-piece of machinery, as the enviable reputation it has already acquired from a discriminating public needs nothing further from our hands.

Plowmen, and in fact every article required by the agriculturist in prosecuting his independent calling.

We would also state, that our new branch, viz.—**SELLING COUNTRY PRODUCE**, is meeting with public favor every day—it is just what the farmer has stood in need of for half a century—a place to confide his produce for sale. Our Circulars, setting forth the new features of this business can be had by addressing us, and sending Post Office directions.

**HORSE POWERS and THRASHERS**, warranted to perform well—warranted in workmanship to stand, (the castings, not like other patterns, excepted,) but they also warranted, and again warranted to be the cheapest and most economical patterns ever offered.

**GUANO** and all other kinds of Fertilizers constantly on hand. **FRUIT and ORNAMENTAL TREES**.—We take great pleasure in informing our friends, that we have secured the Agency of D. MILLER'S celebrated **NORTH AMERICAN NURSERIES**, Pa. N. B.—Catalogues by addressing us.

Dr. K. BULLOCK'S celebrated **EXTERNAL and INTERNAL APPLICATION**, for man and beast, entirely vegetable in its properties, and strongly recommended in cases of Rheumatism, Sprains, Galls, &c., &c., for sale by us, wholesale and retail—the sole appointed Agents in U. S.

N. B.—Our friends residing down the Bay, or who consider our establishment at too great a distance up town, will have all orders entrusted to our care faithfully executed, and goods delivered to any portion of the city, free of charge—Moreover, they can ride within a square of our establishment for 8 1/2 cents.

N. B.—All expenses paid by us when purchase is made.  
OCT-1 F. B. DIDIER & BRO.

**Eastern Virginia Farm For Sale.**

HAVING declined a removal to the country, we are determined to sell the highly improved FARM, owned by us in the county of Dinwiddie, distant from the city between 2 and 3 miles, at the junction of the Plank and Court House Roads, containing 250 acres, 100 of which has been limed and highly manured, and upon which very fine crops of Wheat, Oats and Corn are now being raised.

If desired, it may be advantageously divided as follows:  
60 Acres, with the principal buildings, at the junction on the south side, having a never failing spring, a well of fine water, and a large number grafted Fruit Trees.

80 Acres, opposite the above, with the usual buildings, on the north side of the road; has 10 acres of good, original growth, a well of good water, with a large quantity of grafted Fruit, and has been used for the last 5 or 6 years as a productive market garden.

100 Acres, detached from either of the above, on the south side, (fresh land,) well watered; about 65 acres are in wood, from which the others could be conveniently supplied.

If not disposed of by Friday, the 22d day of October next, it will on that day be offered and sold as a whole, or divided, as may be considered best for the interest of those concerned.

**RO. RITCHIE.**

sept 1-21\*

Petersburg, Va., Sept. 1852.

**GROUND BONES.**

**TO FARMERS AND PLANTERS.**—The subscribers beg leave to inform their friends and patrons that they still continue the Grinding of Bones, collected daily from the butchers, therefore perfectly fresh, and contain all their fertilizing qualities in the greatest perfection. Their late improvement in machinery also renders the Bones finer and more desirable.

Orders received at the store of **Geo. C. COLLINS & DENSON**, 33 Light street wharf, or at the Factory, intersection of Columbia street and Washington road.

Aug 3-4

**COLLINS & BULLOCK.****FOR SALE.**

**IMPROVED SHORT HORN and ALDERNEY CATTLE**, of different ages, the greater part of them bred on the farm of Thomas P. Remington, Esq. Many of the Short Horns are descendants of the herd of the late Mr. Bates, of Kirkcubright, England, justly celebrated as one of the best and most scientific breeders of the age.

The Alderneys are from the best imported stock. The Cows of that breed are unrivalled as rich milkers. Apply to

**AARON CLEMENT,**

Agent for the purchase and sale of improved stock, &c.  
Sept 1-1f Cedar st. above 9th st. Phila.

**Improved Super-Phosphate of Lime**

THE SUBSCRIBER is now prepared to furnish this admirable manure in any quantity. It is made after a recipe furnished by the Editor of the *Working Farmer*, and it has been used by himself and others, with the most marked advantages, for the last five years. The use of bones for manure has been long known to the community, and their importation into England, has reached the immense sum of Ten Millions of Dollars per annum. These are chiefly used by chartered companies of the City of London and elsewhere, for the manufacture of Super-phosphate of Lime, made by dissolving bones in sulphuric acid—and five bushels of the Super-phosphate of Lime so prepared, has been long known to equal in effect fifty bushels of finely ground bones.

Until the present time the manufacture of Super-phosphate of lime for sale has not been entered into in this country, and the method by which the article is manufactured, now offered by the subscriber, produces an article every way superior to the English Super-phosphate; for in addition to the phosphoric acid and sulphuric acid usual in the manufacture of Super-phosphate of lime, it contains such proportion of Peruvian Guano, as is found necessary to furnish the other constituents of plants not contained in bones, and to these is added a liberal quantity of sulphate of ammonia made from the waste liquor of the gas houses.

Arrangements made by the manufacturers enable them to procure these materials at the cheapest possible rates, and hence they can offer a pure article, composed entirely of phosphate of lime, sulphuric acid, Peruvian Guano, and sulphate of ammonia, at a price equal to that of Peruvian guano, but for the use of the farmer it is of quite double its value. By such treatment the ammonia is no longer volatile, and hence it is more lasting than Peruvian guano. The phosphate of lime is rendered soluble, and therefore is at once available for plants, while the potash, uric acid, and other constituents of guano, bear a more just proportion to the requirements of plants, than as they exist in the Peruvian guano alone. Five hundred pounds of the Improved Super-phosphate of Lime have been found by frequent experiment, to fully equal in value thirty half cords of well rotted stable manure, and from not being volatile, lasts in the soil until consumed by the plants. The cost of this quantity is not so great as would be the expense of cartage and banding of thirty half cords of stable manure given to the farmer, at 3 miles from his gate.

The convenience of this manure consists in its small bulk, and consequent ease of handling. It may be used before or after the planting of the crop, for even when applied as a top-dressing it cannot be lost by evaporation, as none of its constituents are volatile. A single hundred pounds applied as a top-dressing to meadows, will increase the yield more than a ton per acre.

As a drill manure it is unequalled, for unlike the unprepared guano, it does not destroy seed nor interfere with early growth. It may be applied in the hills during the cultivation of corn, potatoes, and other crops. When crops have been previously manured in the usual way and found to be of sluggish growth, it may be augmented by the use of this manure. To the Horticulturist it is invaluable, as it may be applied to fruit trees at any season of the year. More than a thousand bushels of Ruta Baga turnips have been raised to the acre, by the application of one hundred pounds of the Improved Super-phosphate of Lime; eight hundred bushels of long Orange Carrot, and eleven hundred bushels of White Belgian Carrot, have been raised to the acre by the application of this manure. For garden crops it is all that is necessary for success. Its superiority and economy, as compared with guano, is very great. Comparative experiments have been made with this manure alongside of all other known fertilizers, and invariably with results favorable to the Improved Super-phosphate of Lime. By adding this preparation to ordinary compost heaps, the farmer is enabled to supply such deficiencies as are most frequently to be met with in soils.

Throughout the Atlantic States the soils have become nearly denuded of phosphoric acid by the export of bones to Europe, and by the export of crops containing this requirement; thus we find the wheat crops of New York, Ohio, and other States, less than half what they were per acre 30 years since. The application of the manure now offered, renews the ability of these soils to raise wheat. The tobacco lands of Virginia may be at once rendered fertile by this application, and to the dairyman it may prove an entire desideratum. Phosphate of lime exists in milk in large quantities, and therefore for continual pasture, the fields of our dairy farms require additions of this material. They also require the stimulating effects of ammonia to enable the plants to make use of the phosphate of lime, and the same quantity of grass with this amendment, will be found to enable cows to give a larger amount of milk than when fed on grasses from soils not replete with phosphate of lime. Twelve thousand late Bergen Cabbages have been raised from an acre manured with five cwt. of the Improved Super-phosphate of Lime. The keeping properties of vegetables raised with this and

similar manures, are much greater than when raised from putrescent manures alone. For sandy soils, which from their free character cannot retain manures of a volatile character, this preparation will be found efficient, as it cannot be parted with by evaporation. Its superiority for garden use cannot be doubted, as it will not engender weeds nor insects. For bringing sluggish land into immediate harvest, it surpasses stable manures, as no time need necessarily transpire to render its constituents available to plants; they are at once ready for its use, and in an unobjectionable form. When soils are prepared with this amendment, they will retain all the ammonia received from the atmosphere by dews and rains, it being immediately converted into sulphate of ammonia, and therefore no longer volatile. The Improved Super-phosphate of Lime is now offered for sale at \$50 per ton of 2000 lbs. being much less than the price at which it can be manufactured by individuals for use, and the price will, for the future, bear the present ratio as compared with the price of Peruvian guano. It will be furnished to consumers by all the principal Agricultural Warehouses, and may be had in large quantities of the subscriber, who is General Agent for the manufacturers.

Arrangements have been made with Professor Mapes to superintend its manufacture, until those engaged at the factory shall be competent to conduct it without his assistance. His directions as to the relative proportions of materials used will be strictly followed, and purchasers may depend confidently upon its always remaining of uniform quality, and of its containing nothing but the ingredients before named. Each importation of guano will be accurately tested, and the quantity used will compensate for any differences in quality that may exist. The sulphuric acid will be of uniform strength, and the phosphate of lime being invariably heated to redness before its use, will not lead to error by the presence of moisture, or other accidental impurities.

The Improved Super-phosphate of Lime will be delivered in bags of 100, 150, and 50 pounds each, and parties remitting will please order accordingly.

Within the last month an article of entirely different composition from the above, has been introduced in the market, and in some cases it has been purchased in mistake for the Improved Super-phosphate of Lime. Buyers will please observe that the article sold by me is marked with my name.

FREDERICK MCCREADY,

Wholesale Agent for the Manufacturers,  
American Institute Building, 351 Broadway.

As Agent for the Manufacturers, I offer the Improved Super-phosphate of Lime for sale in Baltimore, adding \$2 per ton for expenses from New York to Baltimore.

N. E. BERRY,

Oct. 1-1t No. 8, Light street Wharf.

## THE CHEAP BOOK STORE,

Is now receiving from the New York and Philadelphia

Over 30,000 Volumes

of valuable BOOKS, embracing Works on Agriculture, Medicine, Law, History, Biography, Philosophy, Religion, &c.—including a very large and full assortment of

CLASSICAL AND SCHOOL BOOKS,

Annals and Gift Books, Bibles and Prayer Books, Psalm and Hymn Books, and a general assortment of Children's Books, suitable for the coming holidays. Also,

FOOLSCAP, LETTER AND NOTE PAPERS,

Envelopes, Copy Books, Pass Books, and Blank Account Books, of every description, with a full and general assortment of

PLAIN AND FANCY STATIONERY.

Booksellers, Teachers, and Country Merchants supplied at the lowest wholesale prices.

A. P. BURT,

Oct. 1-1t No. 97, Baltimore street. Between the Bridge and Mechanic's Institute.

## Sausage and Pie Meat Cutters.

LUDLAN'S IMPROVED PATTERN, with detached knives, will cut 4 pounds of meat per minute. The great facility of cleaning, which is a serious objection to all cutters with stationary knives, is obviated in this, as the knives can be taken out, cleaned, and put back, in a second. This machine is something entirely new, and what in a very short time supersede anything in the market, being much cheaper than anything yet offered. For sale by the

F. B. DIDIER & BRO.

Poca, near Franklin street.

All orders will receive prompt attention. Oct. 1

## SEED WHEAT.

GALE'S EARLY GOLDEN CHAFF PREMIUM WHEAT. White and Red MONTGOMERY, imported. MONTGOMERY, grown in Alleghany Co. Md., very fine. WHITE BLUE STEM and ZIMMERMAN, and a general assortment of FIELD SEEDS.

THOS. W. LEVERING & SON,

Oct 1 No. 113 Pratt street wharf.

## Threshing Machines, Hay Presses, and WHEAT DRILLS.

THE undersigned has now on hand at his machine shop, Danville, Baltimore County, a large number of the various Hanover Patents Threshing Machines, Horse Powers, &c., &c.

He is also manufacturing "MERRYMAN'S" PREMIUM HAY PRESSES at the low price of \$75—Also, Hunt's Patent Improved WHEAT DRILLS—Price, \$65.

Any of the above machines will be delivered at Cockeysville, Baltimore County, or Calvert Station, Baltimore City. Orders are respectfully solicited, which will be promptly attended to, and all of his work warranted. Address

JOHN T. LINTON,  
Butler P. O., Balt. Co., Md.

LIME FOR SALE, FOR AGRICULTURAL PURPOSES.—The Gas Light Company of Baltimore have for sale "OSTERHEIL or GASHOUSE LIME" in quantities to suit purchasers, at the low price of 3 cents per bushel.

Chemical analysis shows this Lime to be better adapted as a fertilizer—to much of the soil of the State of Maryland, than "Stone Lime."

Sec. Dr. J. Higgins' (State Agricultural Chemist) Report for 1882, page 20 to 41 inclusive. JOSEPH BROWN, Sec'y.  
BALTIMORE, Sept. 14, 1882. Oct. 1-1t.

STOCK FOR SALE—3 BULLS, 3-4 Devon, and 1 do. & 1/2 Devon and 1/2 Durham—they are 1, 2 and 3 and 4 years old—raised in Delaware, by Mr. Houston.

The above will be exhibited at the State Cattle Show this month, and can be examined on the grounds.

Also, a 7-8 Devon Bull, about 16 mos. old, got by Mr. Geo. Bright's bull, a very fine one of Mr. Patterson's stock; his mother was out of a very superior full Devon cow by a Durham bull of Gen. Cadwallader's, which took a premium at the Philad. Cattle Show—raised by Mr. S. Fisher.

Also, a 2 yr. old Bull, 1-3 Teeswater; 2-3 Durham—will be sold for \$35, deliverable in Baltimore, raised by Mr. Corse, of Baltimore Co. Also, a Bull, 3-4 Ayrshire, 3 yrs. old—price \$50—and a full bred Durham Bull, from Dr. Troup's fine premium cow, 2 yrs. old—price \$50. For further particulars apply to S. SANDS, at this office. Oct. 1-1t



AYRESHIRE AND SOUTHDOWNS.—The subscriber will offer for sale at the ensuing Fair, a few head of thoroughbred Ayrshire cattle, of both sexes. Also, a few head of thoroughbred SOUTHDOWN BUCKS.

Oct. 1-1t

HENRY FRIZZELL.



NEW OXFORDSHIRE EWES.—The subscriber has for sale, some very fine Ewes, 1/2 to 3/4 bred New Oxfordshires, now in lamb by his full bred Oxfordshire buck, from Mr. Reynolds's flock. Apply to Mr. S. SANDS, office of the Farmer, or to

Oct. 1-1t

Cockeysville, Balt. Co. Md.



FOR SALE, 20 half blood COTSWOLD EWES, with lamb, by a full blood Cotswold Ram. Apply to Mr. Sands, or to

HENRY CARROLL,

Waterman's Mills P. O. Balt. Co.

Oct. 1-1t

## Seed Wheat.

1000 BUSHEL SEED WHEAT, white blue stem, free of smut, of prime quality, raised in Talbot Co. Md., for sale in lots to suit purchasers, at \$1.35 per bushel by

aug. 1-3t

F. W. SWEENEY,

corner Stiles and Gough streets.

## PITTS' CELEBRATED Horse Power and Separator.

Oct 1 E. WHITMAN, & CO., Agents,  
Cor. Pratt and Light streets, Balt.

## CONTENTS OF THE OCTOBER NO.

Improvement of worn-out lands, forming compost, 113	Statistics of the Crops, 129
Benefits of Drainage, 118	New varieties of wheat, 129
Agr. and Hort. Exhibit, 112, 130	Poultry at our Show, 129
T. S. P. on Guano and Plaster, 112	Guano and the Lakes Islands, 129
Stabler, on same, 126	Potato Blight, 129
Work in the Garden, 127	To subscribers to the Farmer, 129
Large yield of wheat, 127	Trial of Hay Presses, 129
The Cattle Show, 128	Preventive of smut in wheat, 129
Notices of advertisements, 128	Work on the Farm, 129
Great Week in Oct. 128	Smut in wheat, ploughing in guano, by Mr. Zoellickoff, 129
Our Prize List, 128	Wheat in N. Carolina, 129
Maryland Agr. College, 128	Markets, 129
To Correspondents, 128	
Quotations on Milch Cows, 129, 130	